Mini System **FW-P88/22/37 & FW-C83/22**

FW-C85/22/34/37

Service
Service
Service

Service Manual

COMPACT
disc
DIGITAL AUDIO

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CLASS 1
LASER PRODUCT

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Published by BB 0009 Service Audio Printed in The Netherlands Subject to modification

GB 3139 785 22280

PCS 103 596

PHILIPS

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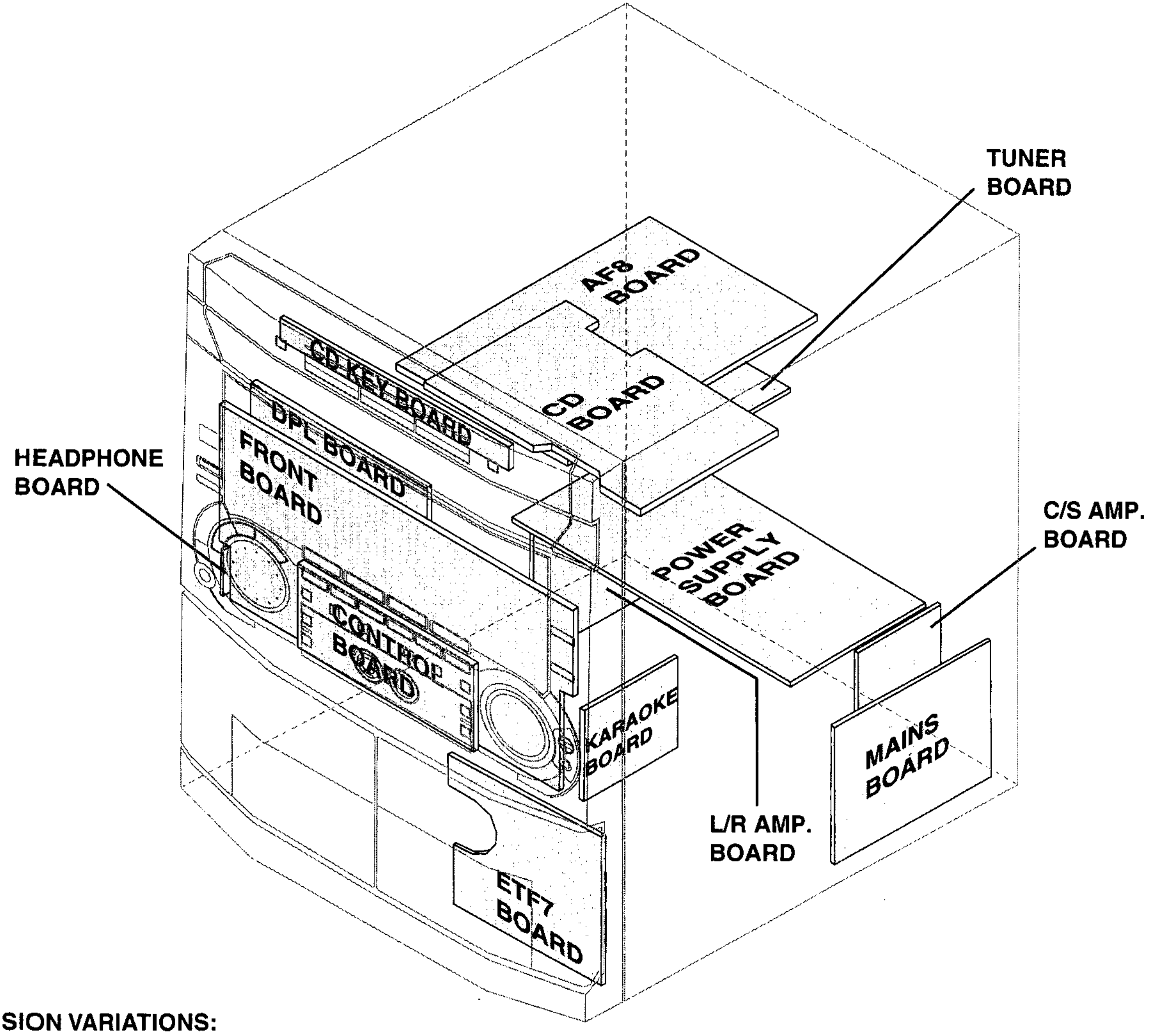
LOCATION OF PRINTED CIRCUIT BOARDS


TUNER BOARD
AF8 BOARD
CD KEY BOARD
DPL BOARD
FRONT BOARD
CD BOARD
HEADPHONE BOARD
C/S AMP. BOARD
POWER SUPPLY BOARD
CONTROL BOARD
KARAOKE BOARD
MAINS BOARD
L/R AMP. BOARD
ETF7 BOARD

VERSION VARIATIONS:

Type /Versions:	FW-C85				FW-P88		FW-C83			
Features & Board in used:	/21 /21M	/22	/34	/37	/22	/37	/22			
Aux In	x	x	x	x	x	x	x			
Line Out	x	x	x	x	x	x	x			
Surround Out					x	x				
Subwoofer Out	x	x	x	x	x	x	x			
Digital Out	x	x	x	x	x	x	x			
Matrix Surround										
CD Text		x	x		x		x			
Dolby B		x	x		x		x			
RDS		x	x		x		x			
News		x	x		x		x			
Dolby Prologic (DPL)					x	x				
Incredible Surround										
Karaoke Features	x									
Voltage Selector	x									
Low Power Standby (Clock Display Off)	x	x	x	x	x	x	x			
Tuner board - ECO5 Sys	x		x	x		x				
Tuner board - Tuner 95		x			x		x			
ETF7 ND/DD/FR - Chapter 9	x			x		x				
ETF7 DB/DD/FR - Chapter 9A		x	x		x		x			
Power5-VA (70W/100W) - Chapter 11		x	x	x	x		x			
Power5-VA (120W/130W) - Chapter 11A	x					x				
Center/Surround Channel					x	x				

SPECIFICATIONS

GENERAL:

Mains voltage : 110-127V/220-240V Switchable for /21/21M
120V for /37
220V for /33
220-230V for /22/34
230-240V for /30
Mains frequency : 50/60Hz
Power consumption : < 2W at Low Power Standby
: < 20W at Standby
: 130W at 1/8 rated power out (P88/22, C83/22)
: 170W at 1/8 rated power out (P88/37)
: 190W at 1/8 rated power out (C85/21/21M/22/34)
: 165W at 1/8 rated power out (C85/37)
Clock accuracy : < 4 seconds per day
Dimension centre unit : 265 x 310 x 390mm

TUNER:

FM

Tuning range : 87.5-108MHz
65.81-74MHz for /34 [1]
Grid : 50kHz (& 30kHz for /34)
100kHz for /37
IF frequency : 10.7MHz ± 25kHz
Aerial input : 75ohm coaxial
300ohm click fit for /37
Sensitivity at 26dB S/N : < 7µV
Selectivity at 600kHz bandwidth : > 25dB
Image rejection : > 25dB [> 75dB]
Distortion at RF=1mV, dev. 75kHz : < 3%
-3dB Limiting point : < 8µV
Crosstalk at RF=1mV, dev. 40kHz : > 18dB

MW

Tuning range : 531-1602kHz
530-1700kHz for /21/21M/37
Grid : 9kHz
10kHz for /21/21M/37
IF frequency : 450kHz ± 1kHz
Aerial input : Frame aerial
Sensitivity at 26dB S/N : < 4.0mV/M
Selectivity at 18kHz bandwidth : > 18dB
IF rejection : > 45dB
Image rejection : > 28dB
Distortion at RF=50mV, m=80% : < 5%

LW

Tuning range : 153-279kHz
Grid : 3kHz
IF frequency : 450kHz ± 1kHz
Aerial input : Frame aerial
Sensitivity at 26dB S/N : [< 7.0mV/M]
Selectivity at 18kHz bandwidth : [> 24dB]
IF rejection : [> 26dB]
Image rejection : [> 35dB]
Distortion at RF=50mV, m=80% : [< 5%]

AMPLIFIER:

Output power (6ohms, 1kHz, 10% THD)
L & R : 2 x 150W for FW-C85/21/21M
L & R : 2 x 120W for FW-C85/22/34
L & R : 2 x 80W for FW-P88/22, FW-C83/22
Surround : 2 x 20W for FW-P88/22
Center : 40W for FW-P88/22

Output power (6ohms, 60Hz-12.5kHz, 10% THD)
L & R : 2 x 100W for FW-C85/37
L & R : 2 x 115W for FW-P88/37
Surround : 2 x 20W for FW-P88/37
Center : 40W for FW-P88/37

Frequency response within -3dB : 60Hz-16kHz
Digital Sound Control (DSC) :
Optimal, Classic, Techno, Jazz, Rock, Vocal
Virtual Environment Control (VEC) :
Hall, Disco, Concert, Club, Cinema, Arcade
WOOX : 1, 2, 3

Headphone output at 32 ohms : 18mW ± 1dB

Input sensitivity
Aux in : 500mV ± 2dB, 1kHz
Microphone : 4mV ± 2dB
Output sensitivity
Line out (Left/Right) : 500mV ± 2dB at 22 kohms
Subwoofer out (100Hz) : 1.3V ± 2dB at 22 kohms
at maximum volume
Surround out (1kHz) : 500mV ± 2dB at 22 kohms

CASSETTE RECORDER:

Number of track : 2 x 2 stereo
Tape speed : 4.76 cm/sec ± 2%
Wow and flutter : < 0.4% (DIN)
Fast-wind/Rewind time C60 : 130 sec
Bias system : 75kHz ± 10kHz
Rec/Pb frequency response within 8dB : 80Hz - 12.5kHz
Signal to noise ratio (unweighted): > 44dB

COMPACT DISC:

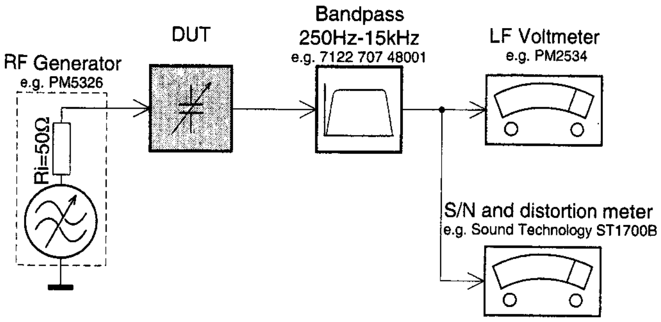
Measurement done at Set level at 6 ohms speaker loads.
Frequency response : < ±3dB for 63Hz-14kHz
Signal to Noise ratio (Unweighted) : 60dBA
Signal to Noise ratio (A-weighted) : 67dBA
THD (30Hz-16kHz) : 1.5%
Channel difference (250Hz-10kHz) : < ±2dB
Channel separation (20Hz-20kHz) : 30dB
(1kHz) : 40dB

[....] Values indicated are for "Tuner 95 Board" only.

[1] Default setting is OFF, to switch on please refer page 3-4.

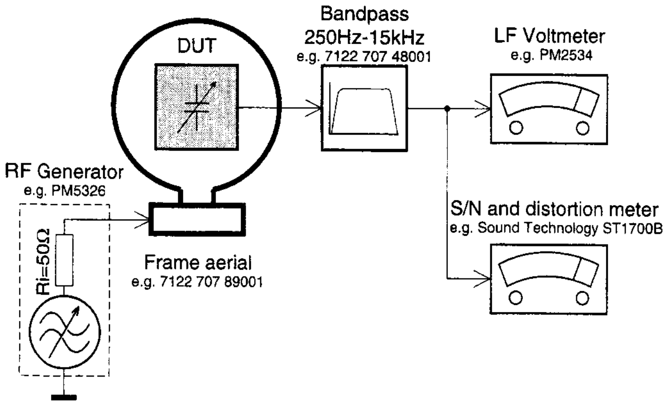
MEASUREMENT SETUP

Tuner FM


RF Generator
e.g. PM5326
Ri=50Ω
DUT
Bandpass
250Hz-15kHz
e.g. 7122 707 48001
LF Voltmeter
e.g. PM2534
S/N and distortion meter
e.g. Sound Technology ST1700B

Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilottone (19kHz, 38kHz).

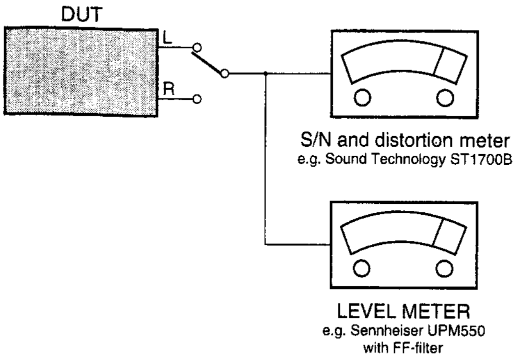
Tuner AM (MW,LW)


DUT
Bandpass
250Hz-15kHz
e.g. 7122 707 48001
LF Voltmeter
e.g. PM2534
RF Generator
e.g. PM5326
Ri=50Ω
Frame aerial
e.g. 7122 707 89001
S/N and distortion meter
e.g. Sound Technology ST1700B

To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday´s cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

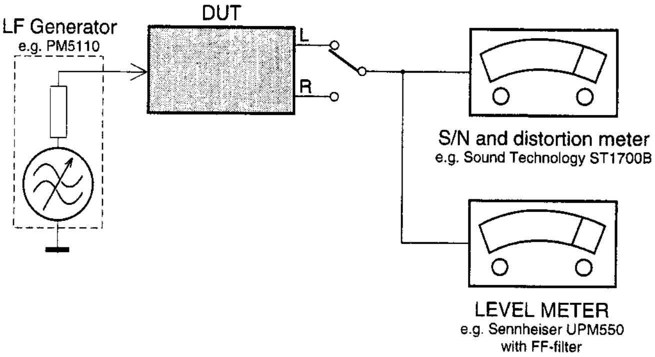
CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)


DUT
L
R
S/N and distortion meter
e.g. Sound Technology ST1700B
LEVEL METER
e.g. Sennheiser UPM550
with FF-filter

Recorder

Use Universal Test Cassette **CrO2** SBC419 4822 397 30069
or Universal Test Cassette **Fe** SBC420 4822 397 30071


LF Generator
e.g. PM5110
DUT
L
R
S/N and distortion meter
e.g. Sound Technology ST1700B
LEVEL METER
e.g. Sennheiser UPM550
with FF-filter

SERVICE AIDS

Service Tools:

Universal Torx driver holder	4822 395 91019
Torx bit T10 150mm	4822 395 50456
Torx driver set T6 - T20	4822 395 50145
Torx driver T10 extended	4822 395 50423

Cassette:

SBC419 Test cassette CrO2	4822 397 30069
SBC420 Test cassette Fe	4822 397 30071
MTT150 Dolby level 200nWb/M	4822 397 30271

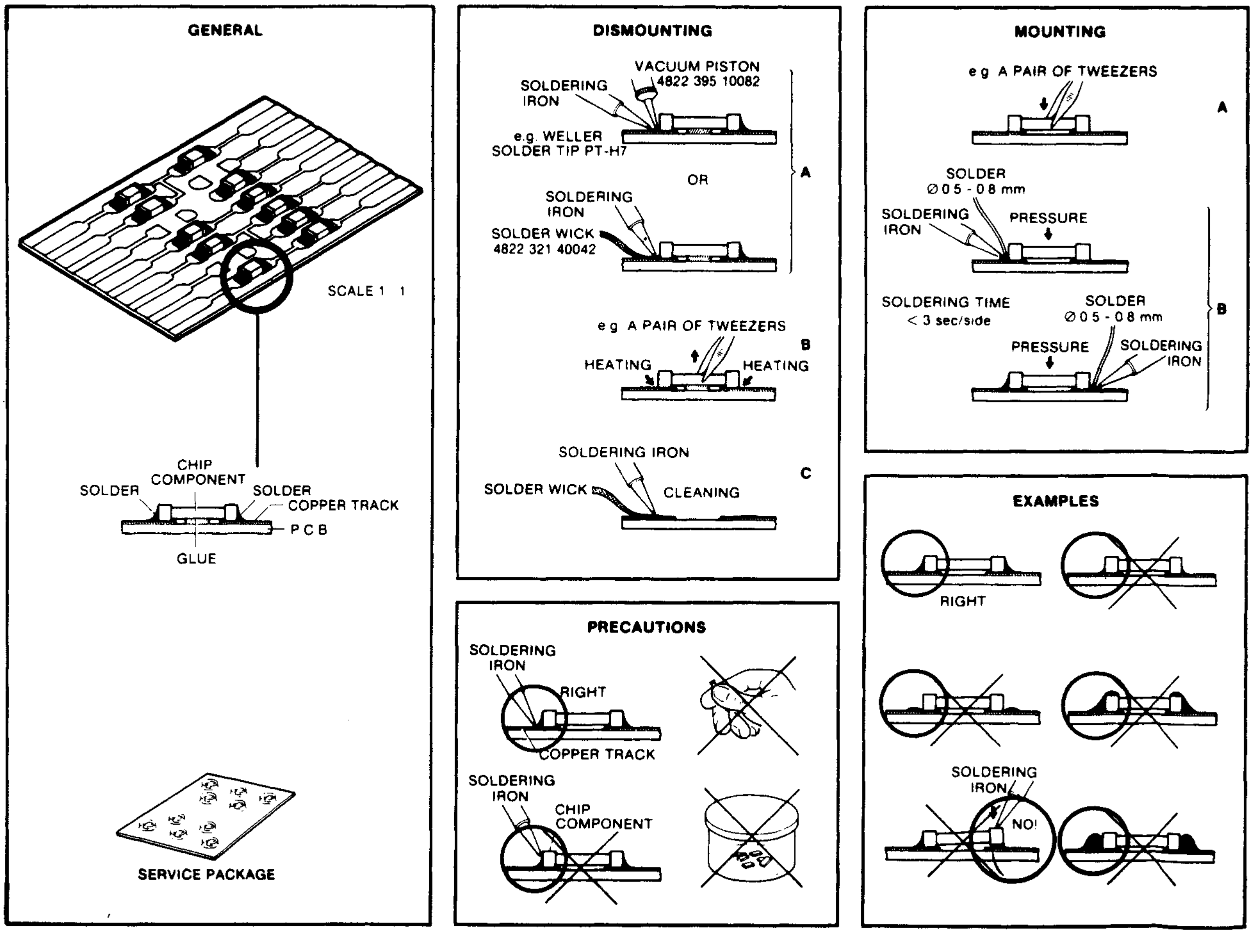
Compact Disc:

SBC426/426A Test disc 5 + 5A	4822 397 30096
SBC442 Audio Burn-in Test disc 1kHz	4822 397 30155
SBC429 Audio Signals disc	4822 397 30184
Dolby Pro-logic Test Disc	4822 395 10216

ESD Equipment:

Anti-static table mat - large 1200x650x1.25mm	4822 466 10953
Anti-static table mat - small 600x650x1.25mm	4822 466 10958
Anti-static wristband	4822 395 10223
Connector box (1MΩ)	4822 320 11307
Extension cable (to connect wristband to conn. box)	4822 320 11305
Connecting cable (to connect table mat to conn. box)	4822 320 11306
Earth cable (to connect product to mat or box)	4822 320 11308
Complete kit ESD3 (combining all above products)	4822 320 10671
Wristband tester	4822 344 13999

HANDLING CHIP COMPONENTS


GENERAL
SCALE 1 : 1
CHIP COMPONENT
SOLDER
SOLDER
COPPER TRACK
P C B
GLUE
SERVICE PACKAGE
DISMOUNTING
VACUUM PISTON
4822 395 10082
SOLDERING IRON
e.g. WELLER SOLDER TIP PT-H7
OR
A
SOLDERING IRON
SOLDER WICK
4822 321 40042
e.g. A PAIR OF TWEEZERS
B
HEATING
HEATING
SOLDERING IRON
SOLDER WICK
CLEANING
C
MOUNTING
e.g. A PAIR OF TWEEZERS
A
SOLDER
Ø 0.5 - 0.8 mm
SOLDERING IRON
PRESSURE
SOLDERING TIME
< 3 sec/side
SOLDER
Ø 0.5 - 0.8 mm
B
PRESSURE
SOLDERING IRON
PRECAUTIONS
SOLDERING IRON
RIGHT
COPPER TRACK
SOLDERING IRON
CHIP COMPONENT
EXAMPLES
RIGHT
SOLDERING IRON
NO!

27 012C12

ESD

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

(NL)

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utiliséés les piéces de rechange identiques à celles spécifiées.

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Original zustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

"After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA."

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

CLASS 1
LASER PRODUCT
3122 110 03420

(GB) Warning !

Invisible laser radiation when open.
Avoid direct exposure to beam.

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(SF) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(DK) Advarse !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

GENERAL INFORMATION

General Information

- ***The type plate (which contains the serial number) is located at the rear of the system.***
- ***Recording is permissible if copyright or other rights of third parties are not infringed.***
- ***This product complies with the radio interference requirements of the European Community.***

Environmental Information

All unnecessary packaging has been omitted. We have tried to make the packaging easy to separate into three materials: cardboard (box), polystyrene foam (buffer) and polyethylene (bags, protective foam sheet).

Your system consists of materials which can be recycled and reused if disassembled by a specialized company. Please observe the local regulations regarding the disposal of packaging materials, exhausted batteries and old equipment.

Energy Star

As an ENERGY STAR® Partner; Philips has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

Acknowledgement

DOLBY SURROUND
PRO • LOGIC

DOLBY B NR

Dolby Pro Logic, Dolby B NR and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation. Manufactured under license from Dolby Laboratories Licensing Corporation.

Accessories *(Supplied)*

- Remote control
- Batteries (two AA size) for remote control
- AM loop antenna
- FM wire antenna
- AC power cord
- CS-540 speaker package (includes one pair of surround speakers and one center speaker)

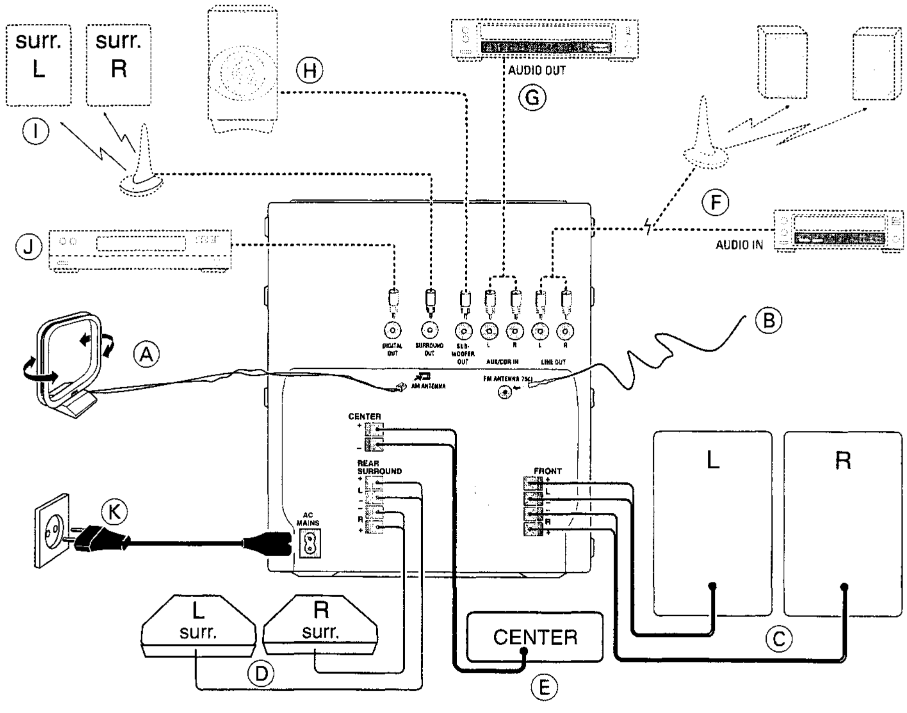
SAFETY INFORMATION

Safety Information

- Before operating the system, check that the operating voltage indicated on the typeplate (or the voltage indication beside the voltage selector) of your system is identical with the voltage of your local power supply. If not, please consult your dealer. The typeplate is located at the rear of your system.
- When the system is switched on, do not move it around.
- Place the system on a solid base (e.g. a cabinet).
- Place the system in a location with adequate ventilation to prevent internal heat build-up in your system. Allow at least 10 cm clearance from the rear and the top of the unit and 5 cm from the each side.
- The system incorporates a built-in safety feature that prevents overheating.
- Do not expose the system to excessive moisture, rain, sand or heat sources
- Under no circumstances should you repair the system yourself, as this will invalidate the warranty!
- If the system is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lens of the CD unit inside the system. Should this occur, the CD player will not operate normally. Leave the power on for about one hour with no disc in the system until normal playback is possible.
- Electrostatic discharge may cause unexpected problems. See whether these problems disappear if you unplug the AC power cord and plug it in again after a few seconds.
- **To disconnect the system from the power supply completely, remove the AC power plug from the wall socket.**

PREPARATION

Rear Connections



Ⓐ AM Loop Antenna Connection

Connect the supplied loop antenna to the AM ANTENNA terminal. Place the AM loop antenna far away from the system and adjust its position for the best reception.

Ⓑ FM Wire Antenna Connection

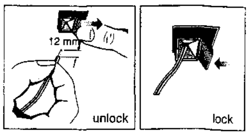
Connect the supplied FM wire antenna to the FM ANTENNA 75 Ω terminal. Adjust the position of the FM antenna for the best reception.

Outdoor Antenna

For better FM stereo reception connect an outdoor FM antenna to the FM ANTENNA 75 Ω terminal using a 75 Ω coaxial wire.

Ⓒ Speakers Connection

- Connect the right speaker to Front terminal R, with the colored wire to + and the black wire to —.
- Connect the left speaker to Front terminal L, with the colored wire to + and the black wire to —.
- Clip the stripped portion of the speaker wire as shown.



CAUTION:
- *For optimal sound performance, it is recommended to use the supplied speakers.*
- *Do not connect more than one speaker to any one pair of +/— speaker terminal.*
- *Do not connect speakers with impedance lower than the speakers supplied. Please refer to SPECIFICATION section of this manual.*

Ⓓ Rear Surround Speakers' Connection

Connect the black (non-marked) wires to the black REAR SURROUND terminals and the colored (marked) wires to the grey REAR SURROUND terminals.

Ⓔ Center Speaker Connection

Connect the black (non-marked) wires to the black CENTER terminal and the blue (marked wires) to the blue CENTER terminal.

Ⓕ Line Out Connection *(wireless ready)*

You can connect the audio left and right LINE OUT terminals to a optional CD Recorder ANALOGUE IN terminals. This allows you to record in an analogue format.

You can also install additional optional front active speakers away from the system (e.g. in another room) to reduce the inconvenience of running long speaker wires across rooms. You can place as many remote speakers as you like provided they operate at the same radio frequency. Connect the wireless radio frequency transmitter to the LINE OUT terminals. Place the active speakers at your preferred location. Be sure to follow the instructions supplied with the active speakers.

Ⓖ Connecting other equipment to your system

You can connect the audio left and right OUT terminals of a TV, VCR, Laser Disc player, DVD player or CD Recorder to the AUX/CDR IN terminals at the rear of the system

Ⓗ Subwoofer Out Connection

Connect the optional active subwoofer to the SUBWOOFER OUT terminal. The subwoofer reproduces just the low bass sound effect (e.g. explosions, the rumble of spaceships, etc.). Be sure to follow the instructions supplied with the subwoofer.

Ⓘ Wireless Surround Out Connection

You may connect transmitter unit of the wireless rear speakers (not supplied) to the SURROUND OUT terminal.

Note:
- *Availability of wireless transmitter and its peripherals are subjected to the approval of local authorities. Please check with respective local safety or approving authority.*

Ⓙ Digital Out Connection

You can record the digital sound from the CD, through this output, on any audio equipment with digital input (e.g. CD Recorder, Digital Audio Tape (DAT) deck, Digital to Analog Converter and Digital Signal Processor)

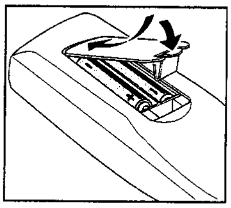
Connect one end of the cinch cable (not supplied) to the DIGITAL OUT socket and the other end to the audio equipment with digital input.When connecting the cinch cable, make sure it is fully inserted.

Ⓚ AC Power Supply

After all other connections have been made, connect the AC power cord to the system and to the wall outlet.

Inserting batteries into the Remote Control

- Insert the batteries (Type R06 or AA) into the remote control as shown in the battery compartment.



- To avoid damage from possible battery leakage, remove dead batteries or batteries that will not be used for a long time. For replacement, use type R06 or AA batteries.

Dolby Pro Logic

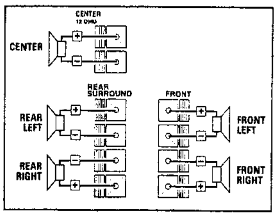
This state of the art Dolby Pro Logic mini system enables you to experience and enjoy a Home Cinema sound ambience. The Pro Logic system allows more accurate definition of the individual sound sources. It produces greater sound separation between channels and provides pinpoint sound localization. Pro Logic provides four sound outputs: Left, Center, Right and Surround (Rear). Front sounds are produced from the pair of Left and Right speakers and a Center speaker. The surround sound is reproduced by two speakers placed at the rear of the listening area. Although the surround sound is monaural (single-source), a pair of speakers is necessary to produce the correct diffused sound.

This Pro Logic decoder enables you to decode the following modes: ***Dolby Surround, Center Phantom, Dolby 3 Stereo*** or ***normal Stereo.***

Setting up the Dolby Pro Logic system

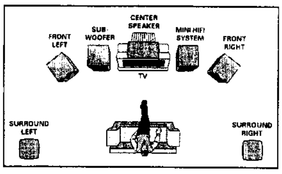
You must set up the system properly in order to enjoy the Home Cinema sound to the fullest. First, connect the speakers.

5-Speaker Connection
- ***Front speakers:*** *Connect the front speakers.*
- ***Center speaker:*** *Connect the center speaker.*
- ***Rear (surround) speakers:*** *Connect either the wired rear surround speakers or a pair of wireless rear speakers (not supplied) to the SURROUND OUT terminals.*



Positioning the Speakers

To get the best surround sound effect, place the speakers as follows.



Front Left and Right Speakers
For the best sound, place the Left and Right speakers at an angle of approximately 45 degrees to the listener. If the speakers' magnetic field affects the television picture, increase the distance between the TV and the speakers.

Center Speaker
For the best sound, place the center speaker at the same height as the left and right speakers. Place the center speaker directly above or beneath the television.

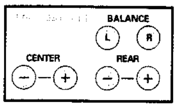
Rear (surround) Speakers
The surround speakers should be placed at normal listening ear level or mounted on the wall at the back of the room. Most important, experiment when placing the surround speakers in order to obtain the best sound.

Test Tone

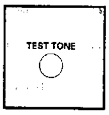
This feature enables you to adjust the Front Left, Front Right, Center and Surround Sound levels of the respective speakers in Dolby Pro Logic mode

You must sit at the ideal sitting position and use the remote control to perform this operation.

1 Press **CD**, **TUNER**, **TAPE** or **AUX** to switch on the system.
2 Press **TEST TONE**.
   → A test signal is generated; it will move through the Left, Center, Right, and Surround speakers, in that order.
   → "TEST TONE" followed by "ADAPT BALANCE, CENTER AND REAR LEVEL" will be displayed.
   → The test signal will last for about 90 seconds.
3 Press **BALANCE L** to adjust the sound of the front left speaker.



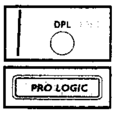
   → The display will show "BAL L +XX".
4 Press **BALANCE R** to adjust the sound of the front right speaker.
   → The display will show "BAL R +XX".
5 Press **CENTER** + or — to adjust the sound of the center speaker.
   → The display will show either "CENT +XX or -XX".
6 Press **REAR** + or — to adjust the sound of the surround speakers.
   → The display will show either "REAR +XX or -XX".
7 Adjust the sound of all the speakers until they are equal. When you are satisfied with the setting, press **TEST TONE** again to switch off the test signal.



Note:
- *It is advisable to set the speakers' level at normal listening level. "XX" denotes the sound level.*

DOLBY PRO LOGIC

When you have completed the Dolby Pro Logic setup, you are ready to enjoy Home Cinema sound.


DPL
PRO LOGIC

- Press **DPL** ***(PRO LOGIC)*** repeatedly to select and cycle through the various sound modes.

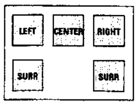
  Dolby Surround → Dolby Center Phantom → Dolby 3 Stereo → Stereo → Dolby Surround ...

  → The Dolby Pro Logic display panel will light up with the selection.

Dolby Surround

This setting is for a full Dolby Surround Pro Logic mode.

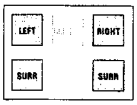
- Press **DPL** to select the Dolby Surround mode.
  → The message "DOLBY SURROUND" will be displayed.
  → The DPL display panel will light up.


LEFT
CENTER
RIGHT
SURR
SURR

Dolby Center Phantom

This setting is for use without the center speaker. It redistributes the center speaker sound to the left and right speakers, providing conventional stereo across the front.

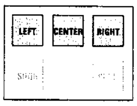
- Press **DPL** to select the Dolby Pro Logic Center Phantom mode.
  → The message "DOLBY CENTER PHANTOM" will be displayed.
  → The DPL display panel will light up.


LEFT
RIGHT
SURR
SURR

Dolby 3 Stereo

Use this setting when full surround is not required, but a wide stereo sound is desired. It only requires the left, right and center speakers.

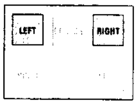
- Press **DPL** to select the Dolby 3 Stereo mode.
  → The message "DOLBY 3 STEREO" will be displayed.
  → The DPL display panel will light up.


LEFT
CENTER
RIGHT

Normal Stereo

This setting is for normal stereo sound without Dolby Pro Logic. It only requires the left and right speakers.

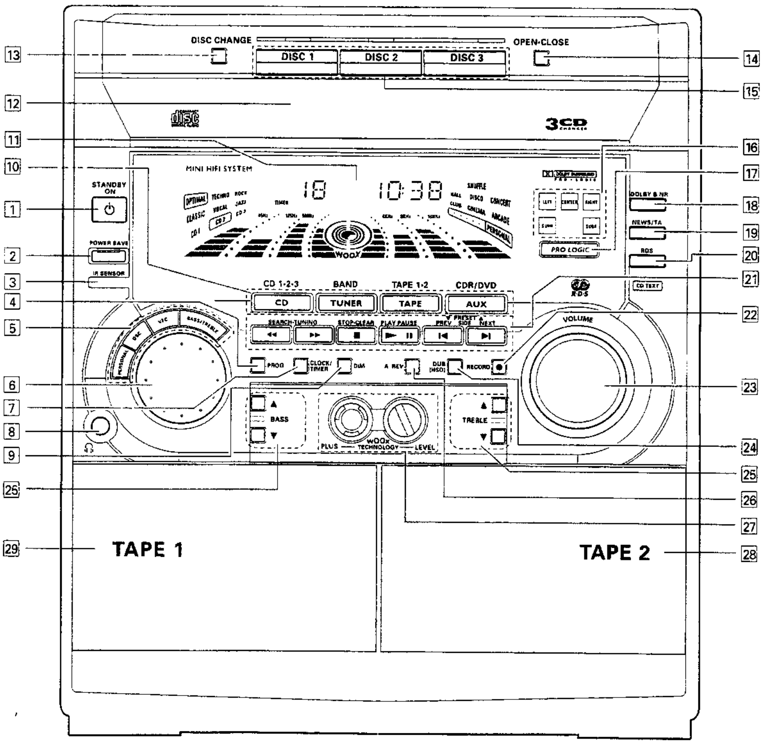
- Press **DPL** to select the Stereo mode.
  → The message "STEREO" will be displayed.
  → The DPL display panel will light up.



Important!

1. ***For the best Dolby Pro Logic sound, switch on DPL with DSC set to "Classic" and with VEC off.***
2. ***Dolby Pro Logic mode will automatically switch to normal Stereo mode when headphones are connected.***
3. ***Switch to normal stereo mode when you record on a tape.***

CONTROLS


DISC CHANGE
DISC 1
DISC 2
DISC 3
OPEN-CLOSE
3CD
MINI HIFI SYSTEM
STANDBY ON
POWER SAVE
IR SENSOR
OPTIMAL
TECHNO
ROCK
CLASSIC
VOCAL
JAZZ
CD 1
CD 2
CD 3
TIMER
SHUFFLE
HALL
DISCO
CONCERT
CLUB
CINEMA
ARCADE
PERSONAL
WOOX
LEFT
CENTER
RIGHT
SURR
SURR
PRO LOGIC
DOLBY B NR
NEWS/TA
RDS
CD TEXT
RDS
CD 1-2-3
BAND
TAPE 1-2
CDR/DVD
CD
TUNER
TAPE
AUX
SEARCH-TUNING
STOP-CLEAR
PLAY PAUSE
PRESET
PREV
SIDE
NEXT
PERSONAL
DSC
VEC
BASS/TREBLE
PROG
CLOCK/TIMER
DIM
A REV
DUB (HSD)
RECORD
VOLUME
BASS
PLUS
wOOx TECHNOLOGY
LEVEL
TREBLE
TAPE 1
TAPE 2
1
2
3
4
5
6
7
8
9
10
11
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14
15
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18
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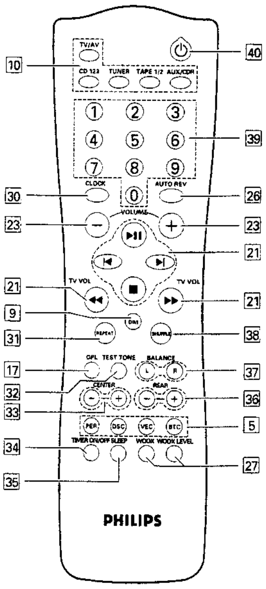
TV/AV
CD 123
TUNER
TAPE 1/2
AUX/CDR
1
2
3
4
5
6
7
8
9
0
CLOCK
AUTO REV
VOLUME
TV VOL
TV VOL
DIM
REPEAT
SHUFFLE
DPL
TEST TONE
BALANCE
L
R
CENTER
REAR
PER
DSC
VEC
BTC
TIMER ON/OFF
SLEEP
WOOX
WOOX LEVEL
PHILIPS
10
40
39
30
26
23
23
21
21
21
9
31
38
17
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33
5
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27
35

Controls on the system and remote control

1 **STANDBY ON**
- to switch the system on or to standby mode.
- to use for EASY SET.

2 **POWER SAVE**
- to switch the system to energy saving mode.

3 **IR SENSOR**
- sensor for the infrared remote control.

4 **PROG (PROGRAM)**

for CD .... to program CD tracks.
for TUNER ..... to program preset radio stations.
for CLOCK ..... to select 12 or 24 hour in clock setting mode *(on the system only)*.

5 **SOUND CONTROL** – to select the desired sound feature : PERSONAL, DSC, VEC or BASS/TREBLE.

6 **JOG**
- to select the desired sound effect of PERSONAL/DSC/VEC setting. You must select the respective sound feature first.

PERSONAL
- to select up to 6 personal preferred Spectrum Analyzer settings : PERSONAL 1-6.

DSC
- to select the desired Digital Sound Control effect : OPTIMAL, CLASSIC, TECHNO, VOCAL, ROCK or JAZZ.

VEC
- to select the desired Virtual Environment Control effect : HALL, CLUB, DISCO, CINEMA, CONCERT or ARCADE.

7 **CLOCK/TIMER**
- to view the clock, set the clock or set the timer.

8 🎧
- to connect headphones.

9 **DIM**
- to select brightness for the display screen : DIM 1, DIM 2, DIM 3 or DIM OFF.

10 **SOURCE** – to select the following:

CD / (CD 1•2•3)
- to select CD mode. When CD playback is stopped, press to select disc tray 1, 2 or 3.

TUNER / (BAND)
- to select Tuner mode. When in tuner mode; press to select the waveband: FM, MW or LW.

TAPE / (TAPE 1• 2)
- to select Tape mode. When tape playback is stopped, press to select either tape deck 1 or 2.

AUX / (CDR/DVD)
- to select sound from an external source (e.g. TV, VCR, Laser Disc player, DVD player or CD Recorder). When in AUX mode, press to select either AUX or CDR/DVD.

TV/AV *(only on the remote control)*
- to select TV or Video mode.

11 **DISPLAY SCREEN**
- to view the current setting of the system.

12 **CD CAROUSEL TRAY**

13 **DISC CHANGE**
- to change CD(s).

14 **OPEN•CLOSE**
- to open or close the CD carousel tray.

15 **DISC 1 / DISC 2 / DISC 3 (CD DIRECT PLAY)**
- to select a CD tray for playback.

16 **DPL DISPLAY PANEL**
- to view the selected Dolby Pro Logic setting.

17 **DOLBY PRO LOGIC (DPL)**
- to select Dolby Surround, Dolby Center Phantom, Dolby 3 Stereo or Stereo mode.

18 **DOLBY B NR**
- to switch on or off Dolby B NR.

19 **NEWS/TA**
- to hear News or Traffic Announcement data automatically.

20 **RDS (CD TEXT)**

for TUNER ..... to select RDS data in the following order: station name, program type and radio text.
for CD .... to view the CD encoded information.

21 **MODE SELECTION**

SEARCH ◀◀ ▶▶ (TUNING ◀◀ ▶▶)

for CD .... to search backward/ forward.
for TUNER ..... to tune to a lower or higher radio frequency.
for TAPE .... to rewind or fast forward a tape
for CLOCK ..... to set the hour *(on the system only)*.
for TV VOL. .... to adjust the TV volume if the remote operates your TV.

STOP•CLEAR ■

for CD .... to stop CD playback or to clear a program.
for TUNER ..... to stop programming.
for TAPE . ... to stop playback or recording.
for DEMO ...... *(on the system only)* to start or stop demonstration mode.

PLAY PAUSE ▶ ❚❚

for CD .... to start or interrupt playback.
for TAPE .... to start playback.

|◀ PREV / SIDE / NEXT ▶| (PRESET ▼▲)

for CD .... to skip to the beginning of the current, previous, or next track.
for TUNER ..... to select a preset radio station in memory.
for TAPE .... to select tape side (back or front) in tape deck 2 only.
for CLOCK ..... to set the minute *(on the system only)*.

22 **RECORD**
- to start recording on tape deck 2.

23 **VOLUME**
- to increase or decrease the volume.

24 **DUB (HSD) (HIGH SPEED DUBBING)**
- to dub a tape in normal or fast speed.

25 **BASS/TREBLE CONTROL** – to adjust BASS/TREBLE level :

BASS ▲▼
- to increase or decrease the low tone.

TREBLE ▲▼
- to increase or decrease the high tone.

26 **A. REV (AUTO REVERSE)**
- available in tape deck 2 only.
- to select the desired play modes (⇀ / ⊐ / ⊂⊃).

27 **wOOx PLUS**
- to select between normal or enhanced wOOx sound effect.

wOOx LEVEL
- to select desired wOOx level . WOOX 1, WOOX 2 or WOOX 3.

28 **TAPE DECK 2**

29 **TAPE DECK 1**

30 **CLOCK**
- to view clock display.

31 **REPEAT**
- to repeat a CD track, a disc, or all available discs.

32 **TEST TONE**
- to check the sound level of the Front Left, Front Right, Center and Surround speakers.

33 **CENTER +/−**
- to adjust the sound level of the center speaker.

34 **TIMER ON/OFF**
- to switch on or off timer.

35 **SLEEP**
- to switch the system to standby mode at a selected time.

36 **REAR +/−**
- to adjust the sound level of the surround speakers.

37 **BALANCE L/R**
- to balance the sound level of the Front Left and Right speakers.

38 **SHUFFLE**
- to play all the available discs and their tracks in random order.

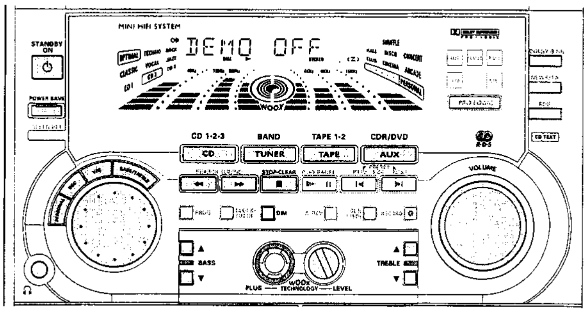
39 **DIGIT 0 – 9**

(numbers consisting of two figures must be keyed in within 2 seconds)

for CD .... to key in a CD track for playback or programming
for TUNER ..... to key in a preset radio station.

40 ⏻
- to switch the system to standby mode.

Notes for remote control:
- ***First select the source you wish to control by pressing one of the source select keys on the remote control (e.g. CD, TUNER, etc.).***
- ***Then select the desired function (▶, |◀, ▶|, etc.).***



Important:
Before you operate the system, complete the preparation procedures.

Demonstration mode

The system has a demonstration mode that shows the various features offered by the system. ***When the system is switched on for the first time, the demonstration mode will start automatically.***

Notes:
- *During the demonstration, if you press any source (or standby-on) button, the system will switch to the respective mode (or standby).*
- *When the system is switched to standby or power save mode, the demonstration will resume 5 seconds later.*

To stop the demonstration mode
- Press and hold ■ *(on the system only)* for ***5 seconds*** when the system is in demonstration mode.
  → The demonstration will stop.
  → "DEMO OFF" is displayed.
  → The system will switch to standby mode.

Notes:
- *When the system is switched on from the main power outlet, the CD carousel tray may open and close again to initialize the set.*
- *Even though the AC power cord is removed from and reconnected to the wall socket, the demonstration will remain off until it is switched on again.*

To start the demonstration mode
- Press and hold ■ *(on the system only)* for ***5 seconds*** when the system is in standby mode.
  → The demonstration will begin.

Easy Set

EASY SET allows you to store all available radio stations and RDS stations automatically.

1 Press and hold **STANDBY ON** *(on the system only)* for ***5 seconds***; when the system is in standby or demonstration mode.
  → "EASY SET" will be displayed, and followed by "TUNER" and then "AUTO".
  → EASY SET will start searching for all RDS radio stations with sufficient signal strength and then followed by radio stations on FM, MW and LW band respectively. Weak RDS radio stations may be stored in later presets.
  → All available RDS and radio stations with sufficient signal strength will be stored. Up to 40 presets may be stored.

2 The system will proceed to set the RDS time automatically with the stored RDS preset station.
- If no RDS station is available in the first preset station, the program will exit automatically.
  → After a radio station is found, "EASY SET" will be displayed and followed by "TIME".
- When searching RDS time;
  → "SEARCH RDS TIME" will be displayed.
  → When RDS time is read, "RDS TIME" will be displayed. The current time will be displayed for 2 seconds and stored automatically.

Notes:
- *EASY SET will start with the RDS station, if there are still presets available, it will continue to store the FM, MW and LW bands respectively.*
- *When EASY SET is used, all previously stored radio stations will be replaced.*
- *The last preset radio station or the first available RDS station will appear on the display when EASY SET is completed.*
- *If RDS station does not transmit RDS time within 90 seconds, the program will exit automatically and the display will show "NO RDS TIME".*

Switching the system ON

- Press **CD**, **TUNER**, **TAPE** or **AUX**.

You can also switch on the system by pressing any one of the CD DIRECT PLAY buttons.

Switching the system to standby mode

- Press **STANDBY ON** or ⏻ on the remote control.
  → The system will switch to standby mode.

Switching the system to power save mode *(when Demonstration mode is stopped)*

- Press **POWER SAVE** to switch to energy saving mode (< 2 watts).
  → "LOW POWER STANDBY ON" will be displayed, after which the display screen goes blank.
  → The low power STANDBY ON LED will be lit.

Note:
- *if the demonstration mode has not been disabled, it will resume 5 seconds later.*

Selecting the Source

- Press the respective source selection button: **CD**, **TUNER**, **TAPE** or **AUX**.
  → The display indicates the selected source.

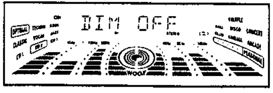
Note.
- *For an external source, make sure you have connected the audio left and right OUT terminals of the external equipment (TV, VCR, Laser Disc player, DVD player or CD Recorder) to the AUX/CDR IN terminals.*

Dim mode

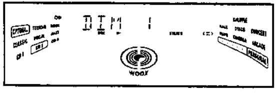
You can select the desired brightness for the display.

- Press **DIM** to select DIM 1, DIM 2, DIM 3 or DIM OFF display mode.
  → The **DIM** appears on the display.
  → "DIM 1", "DIM 2", "DIM 3" or "DIM OFF" will be displayed depending on the mode selected.

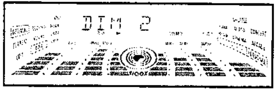
DIM OFF - normal brightness with Spectrum Analyzer On



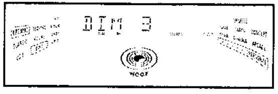
DIM 1 - normal brightness with Spectrum Analyzer Off



DIM 2 - half brightness with Spectrum Analyzer On



DIM 3 - half brightness with Spectrum Analyzer Off and all LEDs on the system will be switched off.



Volume Control

Adjust **VOLUME** to increase or decrease the sound level.

For Personal Listening
Connect the headphones plug to the 🎧 socket at the front of the system. The speakers will be muted.

Sound Control

For Optimal sound listening, you can only select one of the following sound control at a time : PERSONAL, DSC, VEC or BASS/TREBLE.

PERSONAL SOUND
You can store upto 6 personal settings.

1 Press to select the **PERSONAL** feature.
2 Adjust the **JOG** to select the desired Personal setting.
  → The selected personal setting number will be encircled
  → If no name has been stored previously, "PERSONAL X" will be displayed. "X" is the setting number.

Personal Setting

You can adjust the personal setting to your desired level with the JOG control.

1 Press and hold **PERSONAL** for about ***5 seconds*** to switch on the personal setting mode.
→ "SELECT PRESET NUMBER" will be displayed.
2 Adjust the **JOG** to select the desired preset number for personal setting and press ▶▶ to confirm the selection.
→ "ADAPT LOW FREQ LEVEL" will be displayed.
3 Adjust the **JOG** to select the desired Spectrum Analyzer band level for low frequency.
→ The level will increase or decrease between + 3 and − 3.
4 Press ▶▶ to confirm the selection.
→ "ADAPT MID FREQ LEVEL" will be displayed and the next followed by "ADAPT HIGH FREQ LEVEL".
- Repeat ***step 3 - 4*** to select the desired mid and high frequencies Spectrum Analyzer band levels.

5 You can choose to edit the name for the personal setting.
→ The first character of setting name will be flashing.
6 Adjust the **JOG** to select the desired alphabet, number or symbol.
→ "A to Z", "0 to 9" or "*, -, +, \, /, _".
7 Press ▶▶ to confirm the selection.
→ The next character for editing will be flashing.
- Repeat ***step 6 - 7*** to store up to 10 characters.

8 To store the setting, press **PERSONAL** again.

- ***Before storing the setting, you can press ◀◀ to retrace the steps in the reverse order.***
- ***To exit without storing the setting, press ■ .***

Notes:
- *During personal setting, if no button is pressed within 90 seconds, the system will exit personal setting mode automatically.*
- *wOOx level cannot be stored as part of the personal setting.*
- *It is not possible to adjust Bass/Treble level during personal setting, "USE JOG" will be displayed.*

DIGITAL SOUND CONTROL (DSC)

The DSC feature enables you to adjust the system to suit your type of music.

1 Press to select the **DSC** feature.
2 Adjust the **JOG** to select the desired Digital Sound Control setting : OPTIMAL, CLASSIC, TECHNO, VOCAL, ROCK or JAZZ.
→ The selected digital sound is encircled.
→ "OPTIMAL, CLASSIC, TECHNO, VOCAL, ROCK or JAZZ" will be displayed.

Note:
- *For neutral setting, select CLASSIC.*

VIRTUAL ENVIRONMENT CONTROL (VEC)

The VEC feature enables you to adjust the system to select a type of environment.

1 Press to select the **VEC** feature
2 Adjust the **JOG** to select the desired Virtual Environment Control setting : HALL, CLUB, DISCO, CINEMA, CONCERT or ARCADE.
→ The selected environment is encircled.
→ "HALL, CLUB, DISCO, CINEMA, CONCERT or ARCADE" will be displayed.

BASS/TREBLE

The BASS/TREBLE features enable you to define the sound processor settings for Bass and Treble.

1 Press to select the **BASS/TREBLE** feature.
→ The BASS and TREBLE LED will be lit.
→ "ADAPT BASS AND TREBLE LEVELS" will be displayed.
2 Use BASS/TREBLE CONTROL to select the desired BASS or TREBLE level respectively.
→ The BASS/TREBLE level will increase or decrease between level + 3 and − 3.
- Press **BASS** ▲ or ▼ to select the low tone level.
→ "BASS -X or BASS +X" will be displayed.
- Press **TREBLE** ▲ or ▼ to select the high tone level.
→ "TREBLE -X or TREBLE +X" will be displayed.

Note:
- *"X" denotes the sound level.*

wOOx

There are three wOOx settings to enhance the bass response.

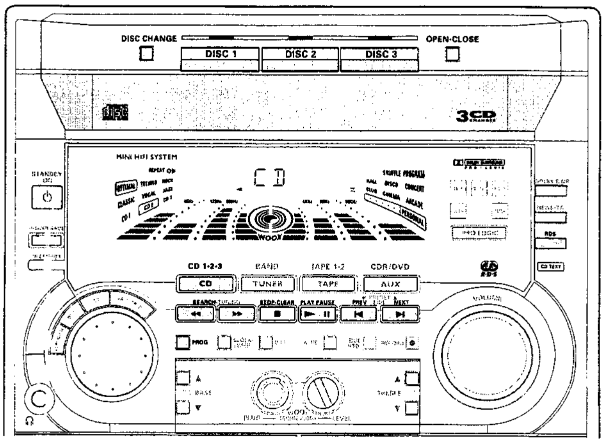
1 Press **wOOx PLUS** *(or **wOOx** on the remote control)* to select between normal or enhanced wOOx effect
- When normal wOOx sound effect is selected;
→ The **wOOx** display is switched off.
→ "WOOX NORM" will be displayed.
- When enhanced wOOx sound effect is selected;
→ The **wOOx** appears on the display.

2 Adjust **wOOx LEVEL** to select the desired levels of wOOx.
→ The **wOOx** display lights up.
→ "WOOX 1, WOOX 2 or WOOX 3" will be displayed.

Notes:
- *When Personal or Bass/Treble sound control is selected, wOOx will be switched off automatically.*
- *Some CDs or tapes might be recorded in high modulation. It may cause distortion at high volume. If this occurs, switch off wOOx or reduce the volume.*

Automatic DSC-wOOx / VEC-wOOx selection

The best wOOx setting is generated automatically for each DSC or VEC selection. You can manually select the wOOx setting that best suits your listening environment.



Warning!

1) ***This system is designed for conventional CDs. Do not use any accessories such as disc stabilizer rings or CD treatment sheets, etc., which may damage the CD mechanism.***
2) ***Do not load more than one disc into each tray.***
3) ***When the CD changer is loaded with CDs, do not turn over or shake the system. This may jam the changer.***

You may load three discs in the CD changer for continuous playback without interruption.

CD Text

It will enable you to know which album and its track you are selecting or playing on specially encoded CD.

- Press **RDS** (CD TEXT).

  At stop mode

  → The title of album or total playing time will be displayed.

  During Playback

  → The title of album, track title or elapsed time will be displayed.
- If the album and track title are not known.

  → "NO TEXT ON DISC" will be displayed.

Discs for playback

This system can play all digital audio CD, finalized digital audio CD-Recordable and finalized digital audio CD-Rewritable format discs.

Loading the CD Changer

1 Press **CD** to select CD mode.

2 Press **OPEN•CLOSE**.

→ The CD carousel tray slides out.

3 Load a CD with the printed side up in the right tray.

- You can load another disc in the left tray.
- To load the third disc, press the **DISC CHANGE** button.

  → The CD carousel will rotate until the empty tray is ready for loading.

4 Press **OPEN•CLOSE** to close the CD carousel tray.

→ The total number of tracks and the playing time of the selected disc appear on the display.

Note:

– *To ensure good system performance, wait until the CD changer completely reads the disc(s) before proceeding.*

CD Direct Play

- You can play a CD directly by pressing the **DISC 1**, **DISC 2** or **DISC 3** button. The CD player will stop at the end of playback of the selected disc.

  → A lit button indicates that a disc is loaded in the disc tray.

  → The selected disc is encircled.

Playing a CD

1 Press **PLAY ▶II** to start playback

→ The disc tray, track number and elapsed playing time of the current track appear on the display.

- To interrupt playback, press **PAUSE ▶II**.

  → The playing time flashes.
- To resume playback, press **PLAY ▶II** again.

2 To stop playback, press ■.

Notes:

– *All the available discs will play once, then stop.*

– *When the CD has stopped playing, the system will switch to standby mode after 30 minutes if no button is pressed.*

Disc Change

You can change the outer two discs while the third inner disc is stopped or is playing.

1 Press **DISC CHANGE**.

→ The CD carousel tray slides out.

2 Replace the discs in the left and right disc trays.

- If you wish to change the inner disc during playback, press **DISC CHANGE** again.

  → "DISC CHANGE" will be displayed.

  → The CD will stop playing.

  → The CD carousel tray will close to retrieve the inner CD and then open again with the inner CD accessible.

3 Press **OPEN•CLOSE** to close the CD carousel tray.

Selecting a desired track

Selecting a desired track when playback is stopped

1 Press I◀ or ▶I *(or **Digit 0-9** on the remote control)* until the desired track appears on the display.

2 Press **PLAY ▶II** to start playback.

→ The selected track number and elapsed playing time appear on the display

Selecting a desired track during playback

- Press I◀ or ▶I *(or **Digit 0-9** on the remote control)* until the desired track appears on the display.

  → The selected track number and elapsed playing time appear on the display.
- If you press I◀ once it will skip to the beginning of the current track and play the track again.

Note:

– *Pressing I◀ during shuffling can only skip to the beginning of the current track.*

Searching for a particular passage during playback

- Press and hold ◀◀ or ▶▶ until the desired passage is located.

  → The volume will be reduced.
- Play returns to normal when ◀◀ or ▶▶ is released.

Programming Tracks

Programming tracks of a loaded CD is possible when playback is stopped. The display will indicate the total tracks stored in the program. Up to 40 tracks can be stored in the memory in any order. When 40 tracks are stored and you attempt to store another track, the display will show "PROGRAM FULL".

1 Load the desired discs in the disc trays.

2 Press **PROG** to start programming.

→ The **PROGRAM** starts flashing.

→ It will cancel any previously selected repeat mode.

3 Press the **CD** (CD 1•2•3) or **DISC 1/2/3** button to select the disc.

4 Press I◀ or ▶I *(or **Digit 0-9** on the remote control)* to select the desired track.

5 Press **PROG** to store the track.

- Repeat steps ***3*** to ***5*** to store other discs and tracks.

6 Press ■ once to end programming.

→ The total number of tracks programmed and total playing time appear on the display.

Notes:

– *If the total playing time is more than "99:59" or if one of the programmed tracks has a number greater than 30, then "--.--" appears on the display instead of the total playing time*

- *If the system is reading the disc, programming is not possible, "READING" will be displayed and followed by "DISC X". "X" is the current read disc number.*
- *During programming, if no button is pressed within 20 seconds, the system will exit program mode automatically.*

Reviewing the program

Reviewing of the program is possible only when playback is stopped.

1 Press ⏮ or ⏭ repeatedly to review the programmed tracks.
2 Press ■ once to exit review mode.

Playing the program

1 Press **PLAY ▶II** to start program playback.
   → "PLAY PROGRAM" will be displayed.
   → The track number and elapsed playing time of the current track will appear on the display.
- If you press **REPEAT** during program playback, the current track or all programmed tracks will be played repeatedly.
   → "TRACK" or "PROGRAM" will be displayed.
   → The **REPEAT** and **PROGRAM** appear on the display.

2 Press ■ to stop program playback.

Notes:
- *If you press any of the CD DIRECT PLAY buttons, the system will play the selected disc or track and the stored program will be ignored temporarily. The* **PROGRAM** *display also will disappear temporarily from the display. It will reappear when playback of the selected disc ends.*
- *REPEAT DISC mode is not available when program playback begins.*

Erasing the program *(when playback is stopped)*

- Press ■.
   → "PROGRAM CLEARED" will be displayed.

Note:
- *The program will be erased when the system is disconnected from the power supply or when the CD carousel tray is opened.*

Shuffle *(only on remote control)*

In shuffle mode, the system plays all the available discs and their tracks in random order. Shuffle may be used also when tracks are programmed.

To shuffle all the discs and tracks

1 Press **SHUFFLE**.
   → "SHUFFLE" will be displayed.
   → The **SHUFFLE**, the disc and the track selected at random appear on the display.
- The discs and the tracks will be played in random order until you press ■
- If you press **REPEAT** during shuffling, the current track or all available discs will be played repeatedly.
   → "TRACK" or "ALL DISC" will be displayed.
   → The **REPEAT** and **SHUFFLE** appear on the display.

2 Press **SHUFFLE** again to resume normal playback.
   → The **SHUFFLE** disappears from the display.

Note:
- *REPEAT DISC mode is not available when shuffle is selected*

Repeat *(only on remote control)*

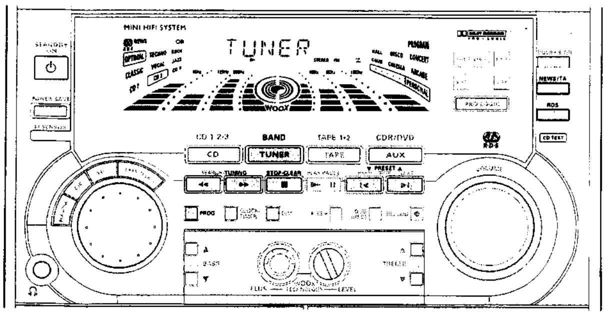
You can play the current track, a disc or all available discs repeatedly.

1 Press **REPEAT** on the remote control to select the various repeat modes.
   → "TRACK", "DISC", "ALL DISC" or "OFF" will be displayed.
   → The **REPEAT** appears on the display.
- The selected track, selected disc or all available discs will now be played repeatedly until you press ■.

2 Press **REPEAT** until the "OFF" mode is displayed to resume normal playback.
   → The **REPEAT** disappears from the display.

Notes:
- *REPEAT DISC mode is not available during program play or shuffle mode.*
- *You can also repeat shuffling a program.*
   → *"TRACK" or "PROGRAM" will be displayed.*
   → *The* **REPEAT, PROGRAM** *and* **SHUFFLE** *appear on the display.*

TUNER



Note:
- *For 'EASY SET' feature, please refer to page 13.*

Tuning to radio stations

1 Press **TUNER** (BAND) to select TUNER mode.
   → "TUNER" will be displayed.
   A few seconds later, the current radio frequency will be displayed.
2 Press **TUNER** (BAND) again to select the desired waveband : FM, MW or LW.
3 Press ◀◀ or ▶▶ for more than one second, then release.
   → The display will show "SEARCH" until a radio station with sufficient signal strength is found.

- Repeat this procedure until the desired station is reached.
- To tune to a weak station, briefly press ◀◀ or ▶▶ repeatedly until the display shows the desired frequency and/or when the best reception has been obtained.

Storing Preset Stations

You can store up to 40 radio stations in the memory. When a preset radio station is selected, the preset number appears next to the frequency on the display.

Automatic programming

1 Press **TUNER** (BAND).
2 Press **PROG** for more than one second.
   → The **PROGRAM** starts flashing and "AUTO" will be displayed
   → The system will start searching for all radio stations with RDS and then followed by radio stations on FM, MW and LW band respectively.
   → All available stations will be stored automatically. The frequency and preset number will be displayed briefly.
   → The system will stop searching when all the available radio stations are stored or when the memory for 40 preset radio stations is used.
   → The system will remain tuned to the last stored preset radio station.

Notes:
- *You can cancel the automatic programming by pressing PROG or ■ (on the system only).*
- *If you want to reserve a section of preset numbers, for example preset numbers 1 to 9, select preset 10 before starting automatic programming, only the preset numbers 10 to 40 will be programmed.*

Manual programming

1 Press **TUNER** (BAND).
2 Press **TUNER** (BAND) again to select the desired waveband : FM, MW or LW.
3 Press **PROG** for less than one second.
   → The **PROGRAM** starts flashing.
   → The next available preset number will be displayed for selection.
4 Press ◀◀ or ▶▶ to tune to the desired frequency.
- If you wish to store the radio station to another preset number, press ▼ or ▲ *(or* ***Digit 0-9*** *on the remote control)* to select the desired preset number.

5 Press **PROG** again.
   → The **PROGRAM** disappears and the radio station will be stored.

- Repeat ***steps 3 – 5*** to store other preset radio stations.

Notes:
- *When 40 radio stations are stored and you attempt to store another radio station, the display will show "PROGRAM FULL". If you want to change an existing preset number, repeat steps 3 – 5.*
- *You can cancel manual programming by pressing ■ (on the system only).*
- *During programming, if no button is pressed within 20 seconds, the system will exit program mode automatically.*

Tuning to Preset Radio Stations

- Press ▼ or ▲ *(or* ***Digit 0-9*** *on the remote control)* to select the desired preset number.
   → The preset number, radio frequency, and waveband appear on the display.

Receiving RDS Radio Station

RDS (Radio Data System) is a broadcasting service that allows FM stations to send additional information along with the regular FM radio signal. This additional information can contain:

- **STATION NAME:** The radio station name is displayed.
- **PROGRAM TYPE:** The following program types exist and can be received by your tuner: News, Affairs, Info, Sport, Educate, Drama, Culture, Science, Varied, Pop M, Rock M, M.O.R. (middle of the road music), Light M, Classics, Other M, No type.
- **RADIO TEXT (RT):** text messages appear in the display.

When you have tuned to a RDS station, the RDS logo (and the radio station name will appear on the display:

- The display normally shows the radio station name if available.
  By repeatedly pressing **RDS** button you can change the type of display information:
  → The display shows in turn:
  STATION NAME → PROGRAM TYPE → RADIO TEXT → TUNED FREQUENCY → STATION NAME ...

Note:
– When you press the RDS button and the display shows "NO RDS", it indicates that either the tuned station is not transmitting RDS signal or it is a non RDS station.

RDS Clock

Some RDS station may be transmitting a real clock time at an interval of every minute.

Setting the time with RDS clock

1 Press **CLOCK/TIMER**.
→ "- - : - -" or current time appears on the display
2 Press **CLOCK/TIMER** once more to enter clock setting mode.
→ "00:00" or current time starts flashing.
3 Press **RDS**.
→ The message "SEARCH RDS TIME" will be displayed.
→ If the station does not transmit RDS clock, "NO RDS TIME" will be displayed.
→ When the RDS clock is read, "RDS TIME" will be displayed. The current clock time is displayed for 2 seconds and will be stored automatically.
→ If within 90 seconds, the RDS time is not detected, "NO RDS TIME" will be displayed.

Note:
– Some RDS station may be transmitting a real time clock at a minute interval. The accuracy of the transmitted time depends on the transmitting RDS station.

NEWS/TA (Traffic Announcement)

(only available in Radio Station with RDS)

You can activate NEWS or TA function in Standby, Demonstration or any source mode except Tuner mode. Once the News Program Type (for NEWS function) or Traffic Announcement data (for TA function) is detected in any of the selected RDS stations, it will switch to TUNER mode automatically.

NEWS/TA key toggles in the following sequence :

NEWS → TA → OFF → NEWS

To start NEWS or TA function

1 Press **NEWS/TA** to select NEWS function.
→ The **NEWS** and "NEWS" will be displayed.
- If you want to select TA function, press **NEWS/TA** again.
→ The **TA** and "TA" will be displayed.

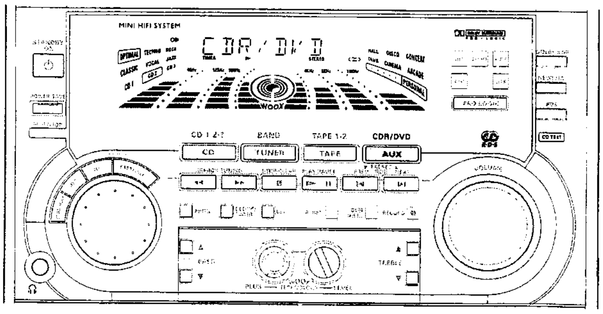
2 When NEWS or TA is selected;
- It will scan stations stored in the first 5 preset and wait for the News Program Type / Traffic Announcement data to be available in any of these RDS stations.
  During the search :
  → The current source activity will remain uninterrupted.
  → If no RDS station is found in the first 5 presets, the NEWS/TA function will be switched off. The display will show "NO RDS NEWS" or "NO RDS TA" and **NEWS** or **TA** will disappear from the display.
- When NEWS/TA transmission is detected, the system will switch to Tuner mode.
  → The **NEWS** or **TA** starts flashing.

To cancel NEWS or TA function

- Press **NEWS/TA** until the **NEWS** or **TA** disappears and "TA OFF" is displayed.

Notes:
– If you are listening to a non RDS TUNER radio station and should you decide to hear NEWS or TA, first select other source (e.g. CD, TAPE or AUX), then press NEWS/TA.
– Before using the NEWS or TA feature, ensure that the first 5 presets are RDS stations.
– The NEWS/TA works only once for each activation.

– During News bulletin or Traffic Announcement, you can press any available source or Tuner function keys to cancel NEWS/TA function and execute the relevant source mode.
– If set is switched to Tuner source, the NEWS/TA function will be cancelled, "NEWS OFF" or "TA OFF" will be displayed immediately after the "TUNER" message.

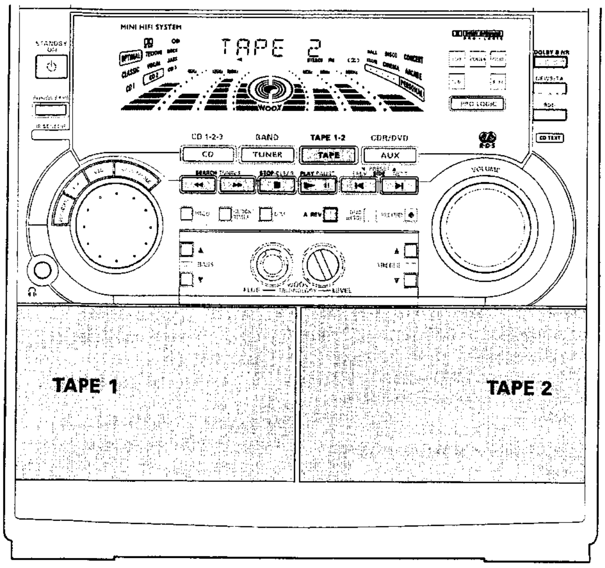


Selecting External Equipment

If you have connected the audio out terminals of the external equipment (TV, VCR, Laser Disc player, DVD player, or CD Recorder) to the AUX/CDR IN terminals, you can hear the enhanced sound from the system.

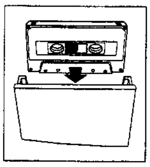
1 Press **AUX** (CDR/DVD) to select the CDR/DVD mode.
→ "CDR/DVD" will be displayed.
2 Press **AUX** (CDR/DVD) again to select external (normal AUX) mode.
→ "AUX" will be displayed.

Notes:
– There are two Auxiliary modes:
i. the normal AUX mode.
ii. the CDR mode, where the LINE OUT of this mini system is muted. You will not be able to record or listen to the sound from the LINE OUT.
– You are advised not to listen to and record from the same source simultaneously.
– All the sound control features (e.g. DSC, wOOx, etc.) are available for selection.



Loading a tape

1 Press on the tape deck to open the tape deck door.
2 The tape deck door opens.
3 Load the tape with the open side downward and the full spool to the left.



4 Close the tape deck door.

Tape Side *(only on tape deck 2)*

- Press ⏮ or ⏭ to select the tape side for playback or recording.
  → The ◀ (BACK) or ▶ (FRONT) appear on the display, depending on the tape side selected.
  → "T2 < < <" or "T2 > > >" will be displayed.
  → When recording, the ◀ or ▶ display will be flashing.

Auto Reverse Playback *(only on tape deck 2)*

- Press **A. REV** to select the different playback modes.

═ ...... to record or playback on one side of the tape. The tape stops at the end of one side.

⊃ ..... to record or playback on both sides of the tape. The tape then stops.

⊂⊃ ... to playback continuously on both sides of the tape up to a maximum of 10 times per side unless you press ■.

Tape Playback

1 Press **TAPE** (TAPE 1•2) to select TAPE mode.
  → "TAPE 1" or "TAPE 2" will be displayed, and followed by "T 1 or T2" with "< < < or > > >".
- Press **TAPE** (TAPE 1•2) again to select either tape deck 1 or tape deck 2.

2 Load the tape into the desired tape deck.
3 Press **PLAY ▶II** to start playback.
- If tape 1 is selected for playback;
  → "T 1" with ">" scrolling right will be displayed.
- If tape 2 is selected for playback;
  → "T2" with "< or >" scrolling left or right will be displayed depending on the tape side selected.

3a(*for playback on tape deck 2 only)*
- Press ⏮ or ⏭ to select tape side *(see Tape Side)*.
- Press **A. REV** to select the different type of playback mode *(see Auto Reverse Playback)*.

4 Press ■ to end playback.
  → "T 1 or T2" with "< < < or > > >" will be displayed.

Note:
- *When the tape has stopped playing, the system will switch to standby mode after 30 minutes if no button is pressed.*

Rewind/Fast Forward

When playback is stopped

1 You can rewind or fast forward the tape by pressing ◀◀ or ▶▶ respectively.
  → If rewinding, "T 1 < or T2 <" with "<" scrolling left will be displayed.
  → If fast forwarding, "T 1 > or T2 >" with ">" scrolling right will be displayed
  → The tape will stop automatically at the end of the rewinding or fast forwarding.
2 Press ■ to stop rewinding or fast forwarding.

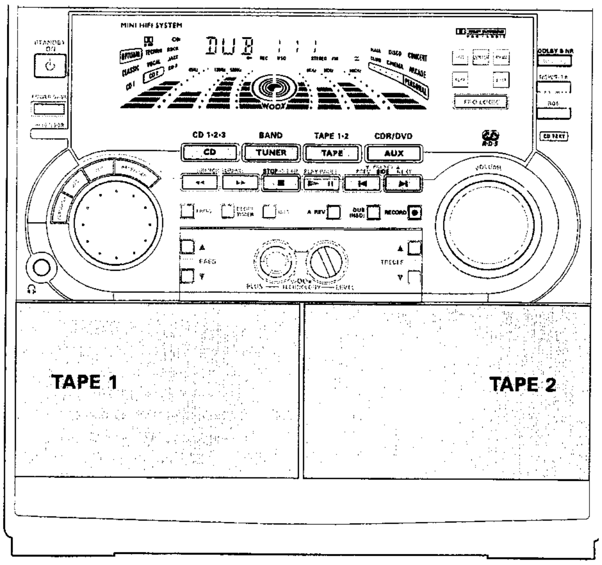
During playback
- Press and hold ◀◀ or ▶▶ until the desired passage is located.
  → "T 1 or T2" with "< < or > >" scrolling left or right will be displayed depending on which button is pressed.
  → During searching, the sound is reduced to a low volume.
  → When you release ◀◀ or ▶▶, the tape continues playing.

Notes:
- *During rewinding or fast forwarding of a tape, it is also possible to select another source (e.g. CD, TUNER, or AUX).*
- *Before playing a tape, check and tighten slack tape with a pencil. Slack tape may get jammed or may burst in the mechanism.*
- *C-120 tape is extremely thin and is easily deformed or damaged. It is not recommended for use in this system.*
- *Store the tapes at room temperature and do not put them too close to a magnetic field (for example, a transformer, TV, or speaker).*

Dolby B Noise Reduction System

1 Press **DOLBY B NR** to switch on Dolby B NR.
  → The DD B NR appears in the display.
2 Press **DOLBY B NR** again to switch off Dolby B NR.
  → The DD B NR disappears from the display.

Note:
- *A tape recorded with the Dolby B NR system should also be played in the Dolby B NR mode. If you forget to operate the DOLBY B NR button, the treble may be reproduced too strongly.*



SWITCH OFF DOLBY PRO LOGIC WHEN RECORDING

Notes:
- *It is not possible to change tape side during recording.*
- *For recording, use only tape of IEC type I (normal tape) or IEC type II (CrO_2).*
- *The tape is secured at both ends with leader tape. At the beginning and end of tape, nothing will be recorded for six to seven seconds.*
- *The recording level is set automatically, regardless of the position of Volume, wOOx, DSC, etc.*
  Dolby B NR can be selected for Tuner or CD recording.
- *To prevent accidental recording, break out the tab on the left shoulder of the tape side you want to protect.*
- *If "CHECK TAPE" is displayed, the protection tab has been broken. Put a piece of clear adhesive tape over the opening. Do not cover the CrO_2 tape detection hole when covering the tab opening.*

Recording from other sources

(only on tape deck 2)

1 Press **TAPE** (TAPE 1•2) to select tape deck 2.
2 Load a blank tape into tape deck 2 with the open side downward.
3 Press ⏮ or ⏭ to select the recording tape side *(see Tape Side under TAPE section).*
4 Press **DOLBY B NR** to record with Dolby B NR.
5 Press **CD**, **TUNER** or **AUX**
- Start playback of the selected source.

6 Press **RECORD** to start recording.
→ The REC starts flashing.
7 Press ■ to stop recording.

Notes:
- *Only ⊐ or ⊐⊃ mode is available during recording .*
- *During recording, it is not possible to listen to another source.*

Dubbing tapes *(from tape deck 1 to tape deck 2)*

1 Press **TAPE** (TAPE 1•2) to select tape deck 2.
2 Load the prerecorded tape into tape deck 1 with full spool to the left and a blank tape into tape deck 2 with full spool aside.
3 Press ⏮ or ⏭ to select the recording tape side *(see Tape Side under TAPE section).*
4 Press **DUB (HSD)** ***once*** for normal speed dubbing or ***twice*** *(within 2 seconds)* for high speed dubbing.
→ "NORMAL" (normal speed) or "FAST" (high speed) will be displayed, followed by "DUB" with "< or >" scrolling left or right depending on the tape side selected.
→ The HSD appears on the display during high speed dubbing.
- Dubbing will start immediately.
→ The REC starts flashing.

5 Press ■ to stop dubbing

Notes:
- *Only ⊐ mode is available during dubbing.*
- *At the end of side A, flip the tapes to side B and repeat the procedure.*
- *Dubbing of tapes is only possible from tape deck 1 to tape deck 2.*
- *To ensure good dubbing, use tapes of the same length.*
- *During high speed dubbing in Tape mode, the sound is reduced to a low volume.*
- *You can listen to another source while dubbing.*
- *Dolby B NR button has no influence during dubbing (dubbing from tape deck 1 to tape deck 2) An original tape recorded with Dolby B NR automatically produces a copy with Dolby B NR.*

CD Synchro Start Recording

1 Load a blank tape into tape deck 2 and a disc into a disc tray.
2 Press **CD** to select CD mode.
- You can program the tracks in the order you want them to be recorded (see Programming Tracks). If not, select the disc by pressing **CD** (CD 1•2•3) and the tracks are recorded according to the order on the selected disc.

3 Press **RECORD** to start recording
→ The REC starts flashing.
- CD will start playback automatically.

4 Press ■ to stop recording.

One Touch Recording

- For One Touch Recording, as soon as you press **RECORD**, the current source (CD, TUNER or AUX) will be recorded on tape deck 2.

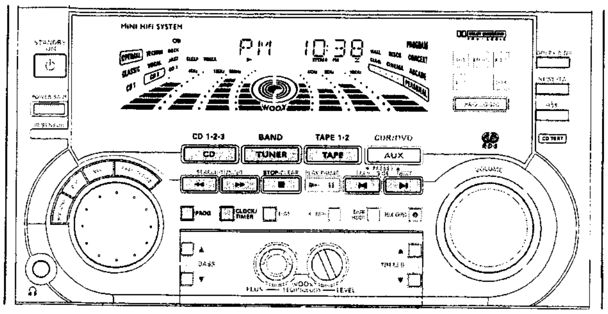
1 Load a blank tape in tape deck 2.
2 Press **RECORD** to start recording.
→ The REC starts flashing.
3 Press ■ to stop recording.

Note.
- *When you press RECORD while in TAPE mode, "SELECT SOURCE" will be displayed. One Touch Recording is not possible in TAPE mode.*

Digital Recording via Digital Out

For CD digital recording, please refer to the Instructions Manual of the CD Recorder, digital audio equipment, etc.

CLOCK



View Clock

You can view the clock (if it is set) if the system is in Standby mode or when any sound source is selected (CD, TUNER, etc.). The clock will be displayed for about 7 seconds.

- Press **CLOCK/TIMER** briefly *(or **CLOCK** on the remote control).*
  → "PM 10:38 or 22:38" (the current time) will be displayed depending on whether you have selected 12- or 24-hour mode.
  → "- - :- - " will be displayed if the clock is not set.

Note:
- *When the system goes into low power standby mode, the clock setting will not be displayed*

Clock Setting

The clock can be set in either 12- or 24-hour mode, e.g. "AM 12:00" or "00:00". Before setting the clock, you must be in the View Clock mode.

1 Press **CLOCK/TIMER** to select clock mode.
2 Press **PROG** *(on the system only)* to select 12- and 24- hour mode.
  → If 12-hour mode is selected, "AM 12:00" starts flashing.
  → If 24-hour mode is selected, "00:00" starts flashing.
3 Set the hour with ◀◀ or ▶▶ on the system.
4 Set the minute with |◀ or ▶| on the system
5 Press **CLOCK/TIMER** again to store the setting.
  → The clock starts.

- To exit without storing the setting, press ■ on the system.

Notes:
- *During clock setting, if no button is pressed within 90 seconds, the system will exit clock setting mode automatically.*
- *When a power interruption occurs, the clock setting is erased.*
- *To set the time with RDS clock, see "Receiving RDS Radio Station" under TUNER section.*

TIMER

Timer Setting

- The system can switch on to CD, TUNER, or TAPE 2 mode automatically at a preset time. It can serve as an alarm to wake you up.
- Before setting the timer, make sure the clock is set correctly.
- The timer will always be switched on once it is set.
- **The volume of the timer will increase from the minimum level until the volume level before the set is switched to standby mode.**

1 Press and hold **CLOCK/TIMER** for more than ***2 seconds*** to select timer mode.
  → "AM 12:00" or "00:00" or the last timer setting starts flashing depending on whether you have selected 12- or 24-hour mode.
  → The **TIMER** starts flashing.
  → The selected source is lit while other available sources are flashing.
2 Press **CD**, **TUNER** or **TAPE** to select the desired source.
- Before selecting CD or TAPE, make sure a CD or tape is loaded in the CD tray or tape deck 2.
3 Press ◀◀ or ▶▶ on the system to set the hour for the timer to start.
4 Press |◀ or ▶| on the system to set the minute for the timer to start.

TIMER

5 Press **CLOCK/TIMER** to store the start time.
  → The timer is now set.
  → The **TIMER** remains on the display.
- At the preset time, the timer will be activated.
  → The selected source will be played.

Notes:
- *During timer setting, if no button is pressed within 90 seconds, the system will exit timer setting mode automatically.*
- *If the source selected is TUNER, the last tuned frequency will be switched on.*
- *If the source selected is CD, playback will begin with the first track of the selected disc or program. If the CD trays are empty, TUNER will be selected instead.*
- *If the source selected is TAPE, and if the preset time is reached during high speed dubbing, the TUNER will be selected instead.*
- *The timer will not activate if a recording is in progress.*

To switch off the TIMER
- Press **TIMER ON/OFF** on the remote control.
  → The timer is now switched off.
  → The display will show "CANCEL" and the **TIMER** disappears

To start the TIMER again *(for the same preset time and source)*
- Press **TIMER ON/OFF** on the remote control.
  → The timer is now on.
  → The **TIMER** appears on the display.

SLEEP TIMER

Sleep *(only on remote control)*

This feature allows you to select a length of time after which the system will switch to the standby mode automatically.

1 Press **SLEEP** on the remote control repeatedly to select a period of time.
  → The selections are as follows (time in minutes):
  60 → 45 → 30 → 15 → OFF → 60 ...
  → "SLEEP XX" or "OFF" will be displayed. "XX" is the time in minutes.
2 When you reach the desired length of time, stop pressing the **SLEEP** button.
  → After this amount of time passes, the system will switch to the standby mode.

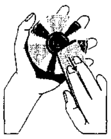
To switch off the Sleep Timer
- Press **SLEEP** repeatedly until "OFF" is displayed, or press the **STANDBY ON** button.

Maintenance

Cleaning the Cabinet

- Use a soft cloth slightly moistened with a mild detergent solution. Do not use a solution containing alcohol, spirits, ammonia or abrasives.

Cleaning Discs



- When a disc becomes dirty, clean it with a cleaning cloth. Wipe the disc from the center out.
- Do not use solvents such as benzine, thinner, commercially available cleaners, or antistatic spray intended for analog records.

Cleaning the CD lens

- After prolonged use, dirt or dust may accumulate at the CD lens. To ensure good playback quality, clean the CD lens with Philips CD Lens Cleaner or any commercially available cleaner. Follow the instructions supplied with cleaner.

Cleaning the Heads and the Tape Paths

- To ensure good recording and playback quality, clean the heads, the capstan(s), and pressure roller(s) after every 50 hours of tape operation.
- Use a cotton swab slightly moistened with cleaning fluid or alcohol.
- You can also clean the heads by playing a cleaning tape once.

Demagnetizing the heads

- Use a demagnetizing tape available at your dealer

Warning! Under no circumstances should you try to repair the set yourself as this will invalidate the guarantee. Do not open the set as there is a risk of electric shock.

- If a fault occurs, check the points listed below before taking the system for repair.
- Should any problems persist after you have made these checks, consult your nearest dealer or service center

CD Player Operation

"NO DISC" is displayed.

- The disc is inserted upside down.
→ *Place CD with printed side up.*
- Moisture condensation at the lens.
→ *Wait until lens has adjusted to normal room temperature.*
- There is no disc in the CD tray.
→ *Insert a CD.*
- The CD is dirty, badly scratched or warped.
→ *Clean or replace the CD.*
- The CD lens is dirty or dusty.
→ *See section under Maintenance (page 30).*

"DISC NOT FINALIZED" is displayed.

- The CD-RW or CD-R disc is not properly recorded for use with a standard CD player
→ *Read the instruction booklet of your CD-Rewritable or CD-Recorder on how to finalize a recording.*
- The CD is badly scratched or dirty.
→ *Replace or clean CD.*

Radio Reception

Poor radio reception.

- The signal is too weak.
→ *Adjust the antenna.*
→ *Connect an external antenna for better reception.*
- The TV or VCR is too close to the stereo system.
→ *Separate the stereo system from the TV or VCR.*

"NO RDS TEXT" is displayed.

- RDS text message is not available
→ *Select another RDS station.*

Tape Deck Operation

Recording or playback cannot be made or there is a decrease in audio level.

- Dirty tape heads, capstans or pressure rollers.
→ *See section on tape deck maintenance (page 30).*
- Magnetic build-up in the record/playback head.
→ *Use demagnetizing tape.*

Tape deck door cannot open.

- Power failure or AC power plug disconnect from the wall outlet during tape playback.
→ *Reconnect the AC power plug and switch on the system again.*

Recorded material sounds strange.

- Tape was recorded in one of the Dolby Pro Logic modes.
→ *Switch off Dolby Pro Logic mode when recording.*

General

System does not react when any button is pressed.

- Electrostatic discharge.
→ *Press STANDBY ON to switch the system off. Remove the AC power plug from the wall outlet, then reconnect the power plug and switch on the system again*

No or poor sound.

- Volume is not turned up.
→ *Adjust VOLUME.*
- The headphones are connected
→ *Disconnect the headphones.*
- Speakers are not connected or are connected wrongly.
→ *Check that the speakers are connected correctly.*
→ *Make sure the stripped speaker wire is clamped.*

Reversed left and right sound.

- Speakers are connected wrongly.
→ *Check the speaker connections and location.*

Lack of bass sound or apparently imprecise physical location of musical instruments.

- Speakers are connected wrongly.
→ *Check the speaker connection for proper phasing, colored/black wires to colored/black terminals.*

Remote control has no effect on the system.

- Wrong source is selected.
→ *Select the source (CD, TUNER, etc.) before pressing the function button (▶, ⏮, ⏭, etc.).*
- The distance to the system is too large.
→ *Reduce the distance.*
- Batteries are inserted incorrectly.
→ *Insert the batteries with their polarities (+/– signs) as indicated.*
- Batteries are exhausted.
→ *Replace the batteries.*

Timer is not working.

- Clock is not set
→ *Set the clock.*
- Timer is not switched on.
→ *Press TIMER ON/OFF to switch on the timer.*
- Recording is in progress.
→ *Stop recording.*

Clock setting is erased.

- There was a power failure.
→ *Reset the clock.*

System displays features automatically; buttons flash continuously.

- Demonstration mode is switched on.
→ *Press and hold ■ (on the system) for 5 seconds to switch off the demonstration.*

There is a howling sound at the external source.

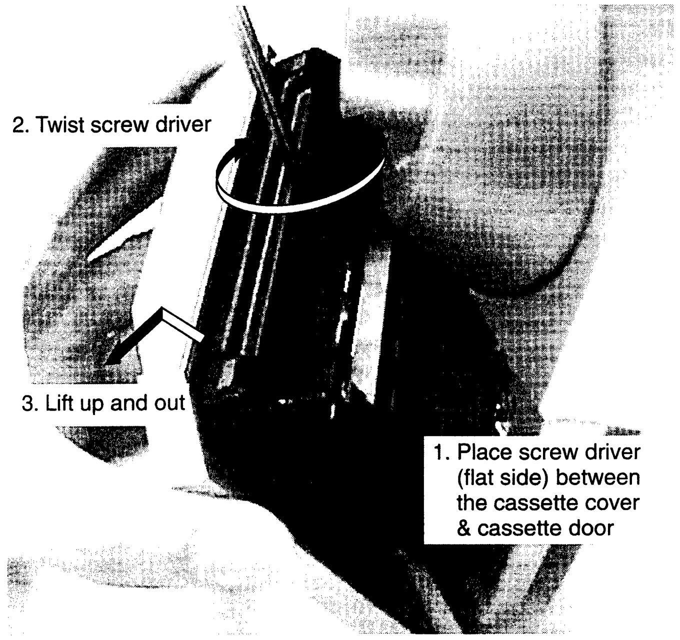
- You hear feedback when you are listening in AUX mode
→ *Press AUX to select CDR/DVD mode.*

All lighted buttons are not lit.

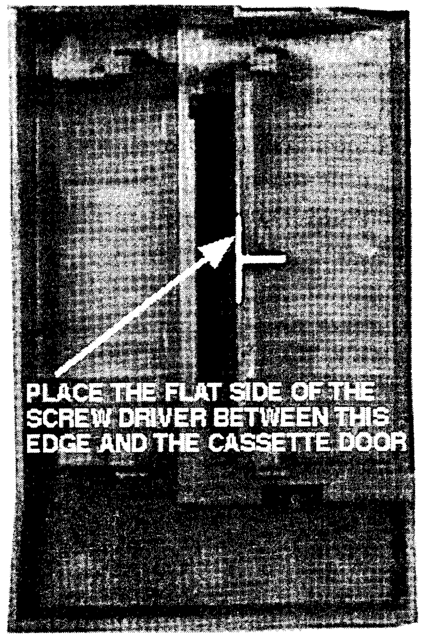
- Display is switch on in DIM 3 mode.
→ *Press DIM until DIM OFF display mode is shown.*

DISMANTLING INSTRUCTIONS

Dismantling of the Cassette Cover


2. Twist screw driver
3. Lift up and out
1. Place screw driver (flat side) between the cassette cover & cassette door

Remove Cassette Cover

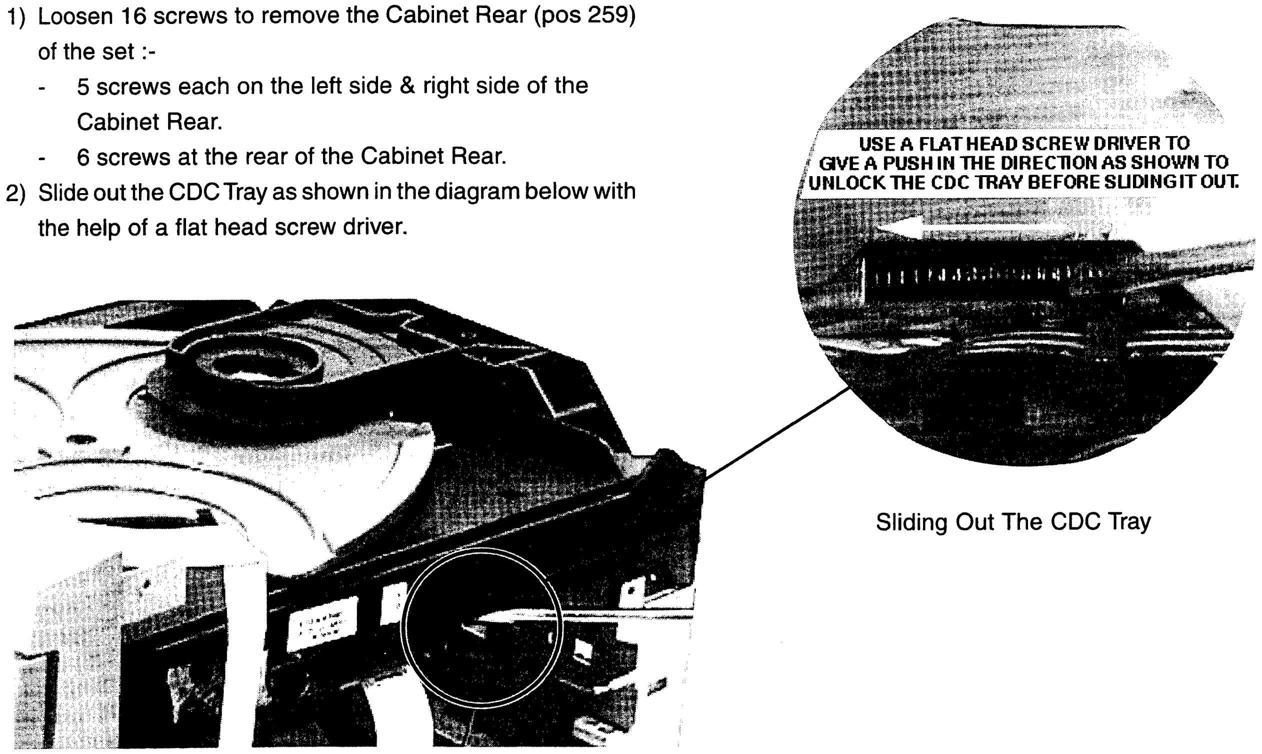


PLACE THE FLAT SIDE OF THE SCREW DRIVER BETWEEN THIS EDGE AND THE CASSETTE DOOR

Cassette Cover

Dismantling of the CDC Module and Front Panel

1) Loosen 16 screws to remove the Cabinet Rear (pos 259) of the set :-
   - 5 screws each on the left side & right side of the Cabinet Rear.
   - 6 screws at the rear of the Cabinet Rear.
2) Slide out the CDC Tray as shown in the diagram below with the help of a flat head screw driver.

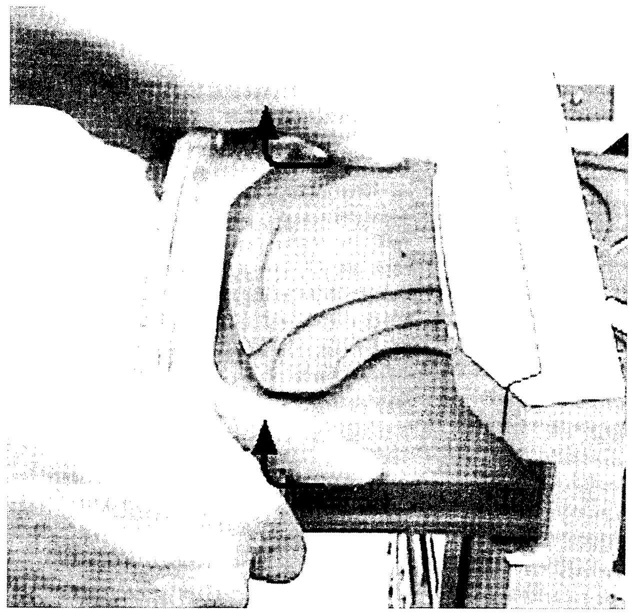


USE A FLAT HEAD SCREW DRIVER TO GIVE A PUSH IN THE DIRECTION AS SHOWN TO UNLOCK THE CDC TRAY BEFORE SLIDING IT OUT.

Sliding Out The CDC Tray

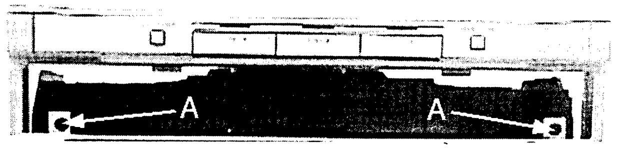
Dismantling of the CDC Module and Front Panel

3) Remove the Cover Tray CDC (pos 106) as indicated.

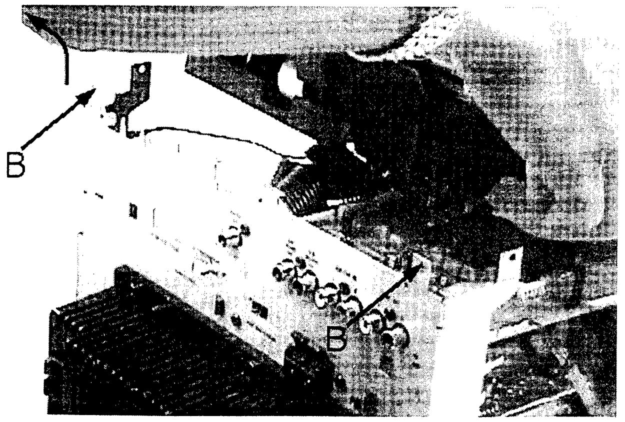


Remove Cover Tray CDC

4) Loosen 2 screws A and 2 screws B to remove the CDC Module (pos 1104) as indicated.
5) Remove 1 screw (pos 305) at the bottom to separate the Front Panel Assembly from the Plate Bottom (pos 236).



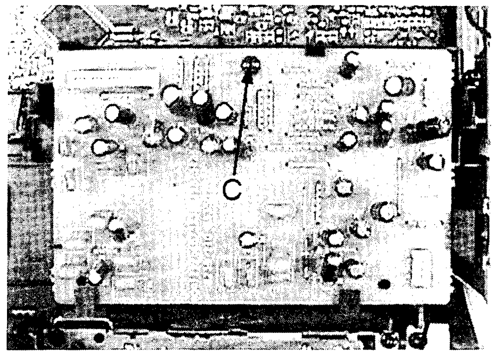
Front View CDC



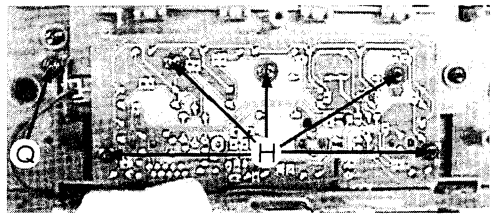
Remove CDC Module

Dismantling of the Front Board

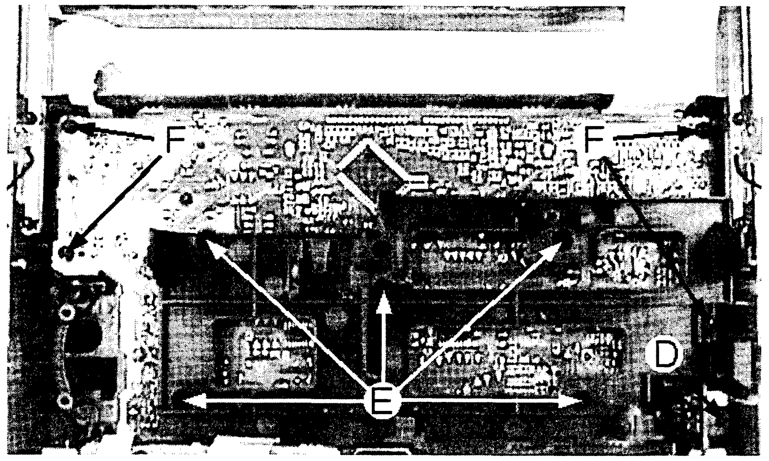
1) Remove 1 screw C as indicated to loosen the Dolby Pro logic Board (pos 1108).
2) Remove 1 screw D as indicated to loosen the Headphone Board (pos 1100-E).
3) Remove 5 screws E as indicated to loosen the Plate Front (pos 254).
4) Remove 4 screws F as indicated to loosen the Front Board (pos 1100-A).
5) Remove 5 screws H as indicated to loosen the Control Board (pos 1100-B).
6) Remove 1 screw Q as indicated to loosen the Blue Strip LED Board (pos 1100-F).



Remove Dolby Pro logic (DPL) Board

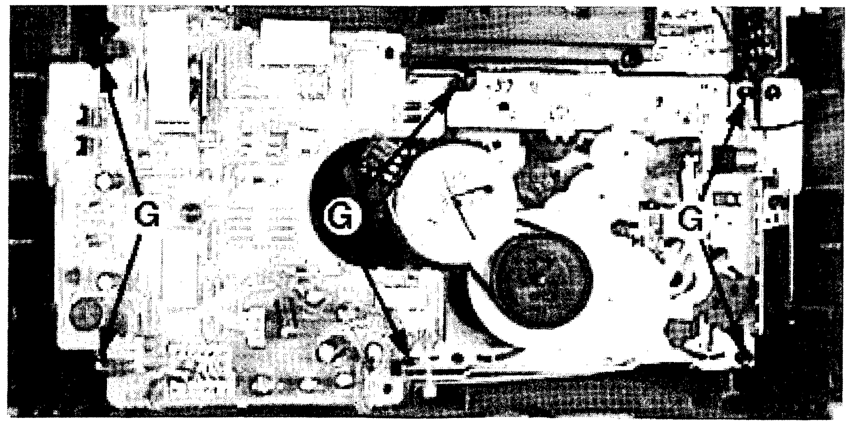


Remove Control and Blue Strip LED Boards



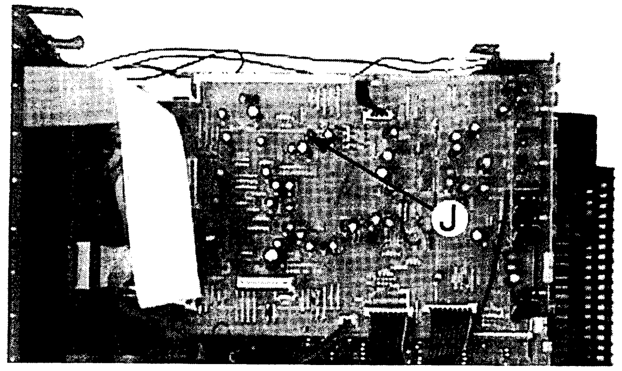
Dismantling of the ETF Tape Module

1) Remove 6 screws G as indicated to loosen the ETF Tape Module (pos 1103).

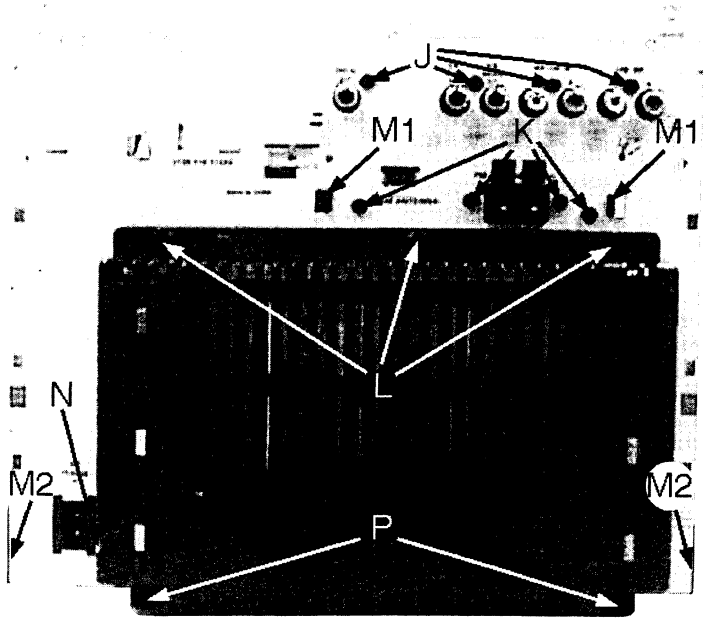


Dismantling of Rear Portion

1) Remove 5 screws J as indicated to loosen the AF Board (pos 1101).
2) Remove 4 screws K and uncatch M1 as indicated to loosen the Tuner Board (pos 1102).
3) Remove 3 screws L and 1 screw N (if obstructed) and uncatch M2 as indicated to take out the Plate Rear (pos 234).
4) Remove 2 screws P to free the Power Module (pos 1105) from the Bottom Plate assembly.



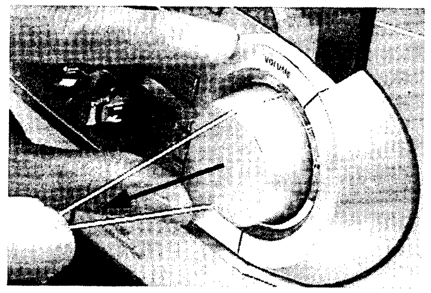
AF Board Top View



Repair Hints

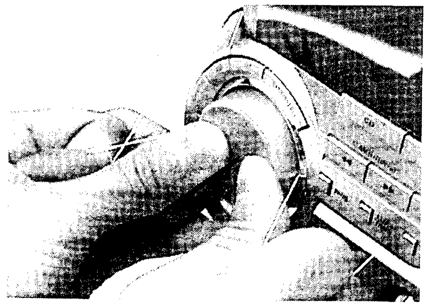
1) The Knob Volume Rotary (pos 149) can be remove by inserting a strong string into the slot and pull it out in the direction as indicated. See picture 1.

Picture 1



2) The Knob Jog Rotary (pos 138) can be remove by inserting a strong string into the slot and pull it out in the direction as indicated. See picture 2.

Picture 2

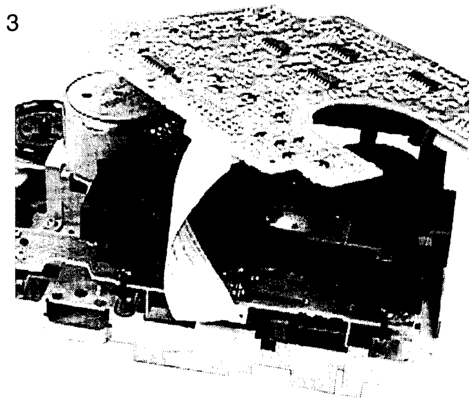


Repair Hints

3) During repair it is possible to disconnect the Tuner board and CDC Module completely unless the fault is suspected to be in that area. This will not affect the performance of the rest of the set.

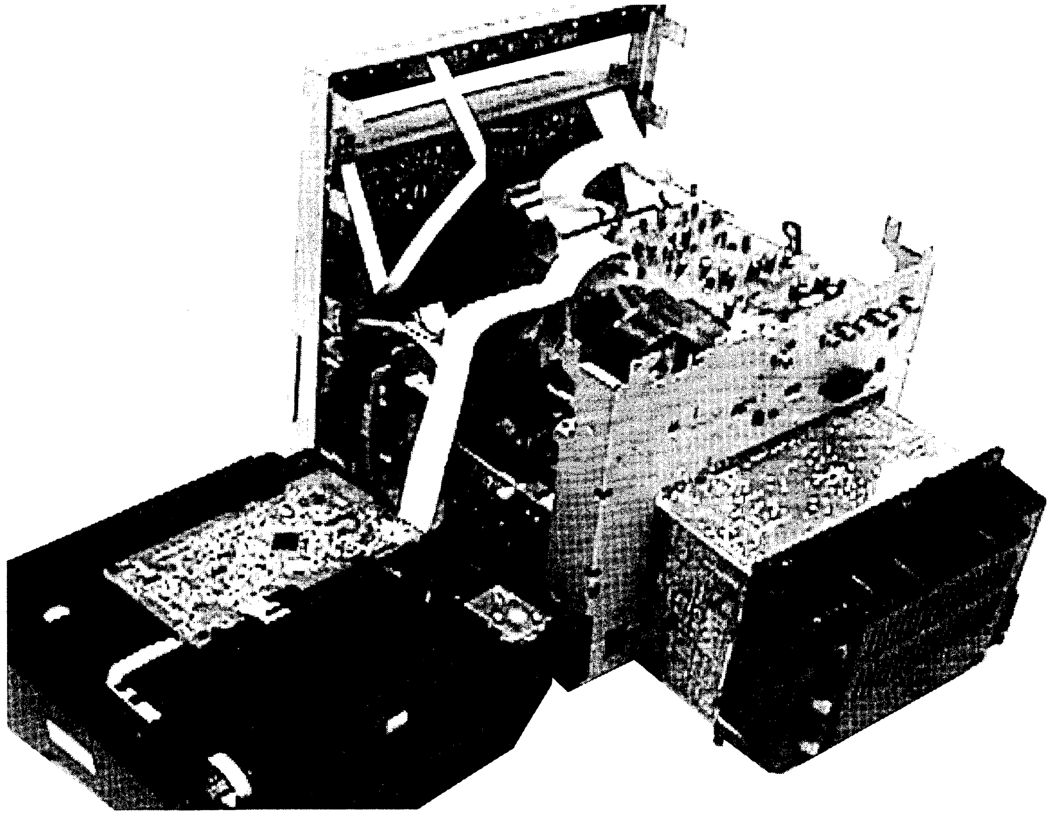
4) Due to the short flex cable wires in the ETF Module, the pc board should be disconnected and reconnected on the reverse side of the tape mechanism to keep it electrically connected during repair. See picture 3.

Picture 3

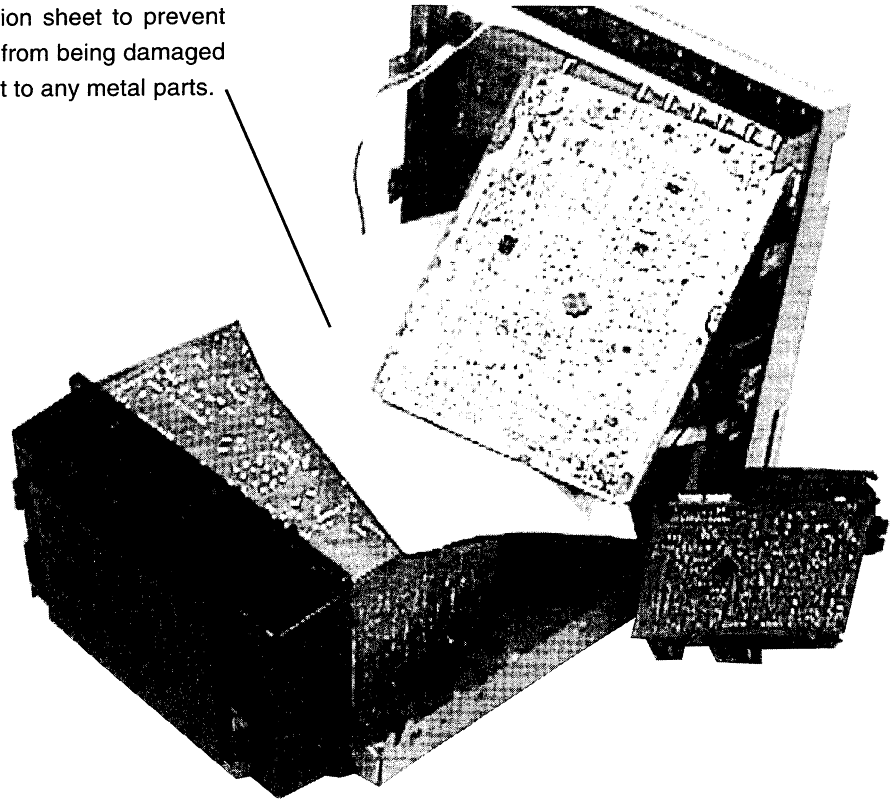


Note: The flex cables are very fragile, care should be taken not to damage them during repair. After repair, be very sure that the flex cables are inserted properly into the flex sockets before encasing, otherwise faults may occurs.

Service pos A

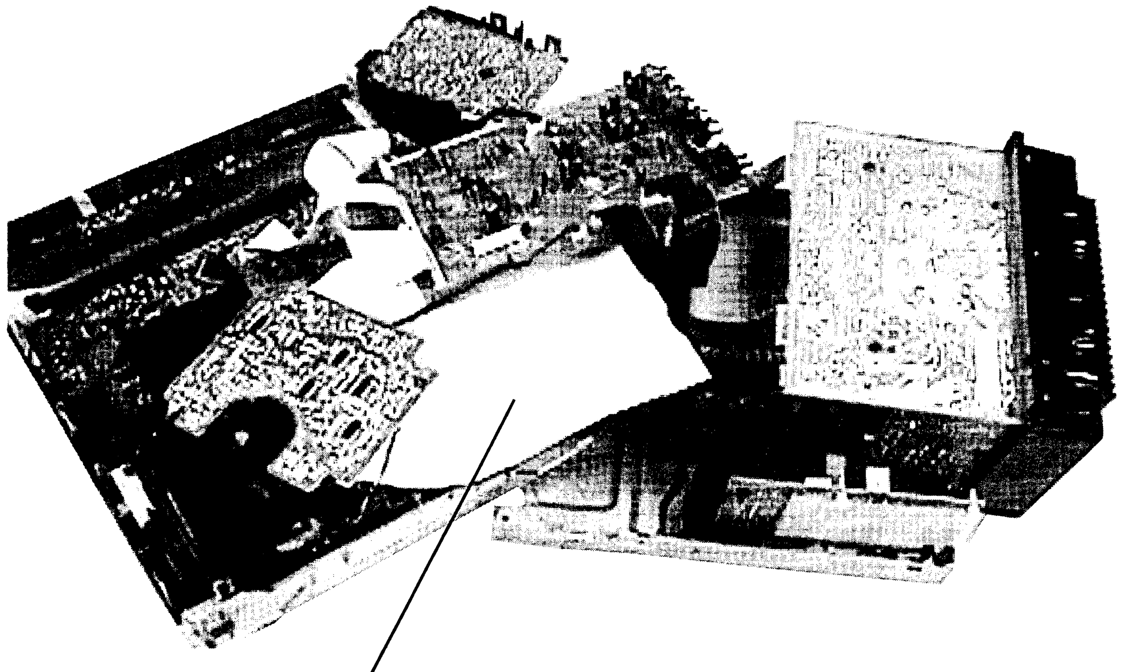


Service pos B



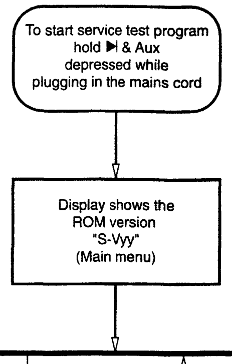
Use a insulation sheet to prevent the AF board from being damaged or short-circuit to any metal parts.

Service pos C



Use a insulation sheet to prevent the ETF board from being damaged or short-circuit to any metal parts.

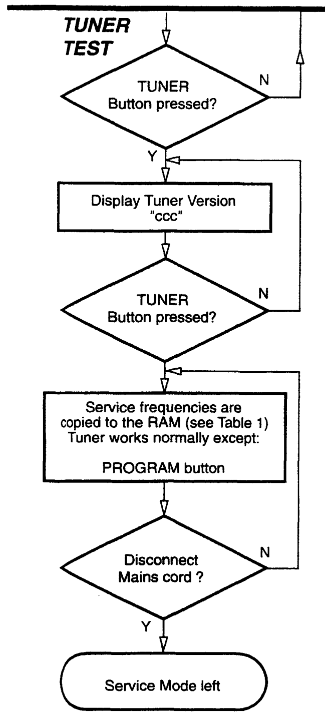
SERVICE TEST PROGRAM

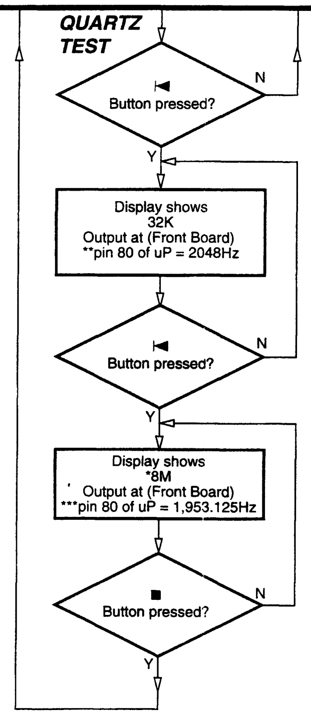

To start service test program hold ▶▮ & Aux depressed while plugging in the mains cord
Display shows the ROM version "S-Vyy" (Main menu)

S refers to Service Mode

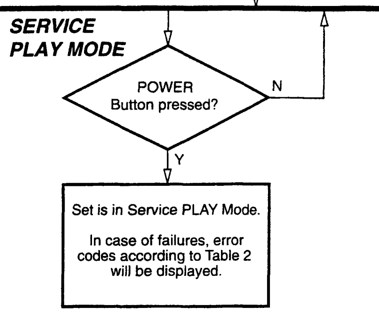
V refers to Version

yy refers to Software version number of the µProcessor (counting up from 01 to 99)


TUNER TEST
TUNER Button pressed?
N
Y
Display Tuner Version "ccc"
TUNER Button pressed?
N
Service frequencies are copied to the RAM (see Table 1) Tuner works normally except:
PROGRAM button
Disconnect Mains cord ?
N
Y
Service Mode left


QUARTZ TEST
▮◀ Button pressed?
N
Y
Display shows 32K Output at (Front Board) **pin 80 of uP = 2048Hz
▮◀ Button pressed?
N
Y
Display shows *8M Output at (Front Board) ***pin 80 of uP = 1,953.125Hz
■ Button pressed?
N
Y

For FW-C83, FW-C85, FW-C90 & FW-P88 :
- * the value is 12MHz
- ** pin 19 of uP = 2048Hz
- *** pin 19 of uP = 2,929.6875Hz


SERVICE PLAY MODE
POWER Button pressed?
N
Y
Set is in Service PLAY Mode.
In case of failures, error codes according to Table 2 will be displayed.

The Service Play Mode is intended to detect and identify the failures in the CD Mode.

In this mode the electronics will still function even when an error is detected so that repair activities can be carried out.

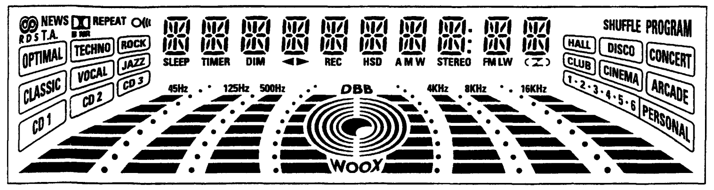

NEWS
REPEAT
RDS T.A.
OPTIMAL
TECHNO
ROCK
CLASSIC
VOCAL
JAZZ
CD 1
CD 2
CD 3
SLEEP
TIMER
DIM
REC
HSD
A M W
STEREO
FM LW
45Hz
125Hz
500Hz
DBB
4KHz
8KHz
16KHz
WOOX
SHUFFLE
PROGRAM
HALL
DISCO
CONCERT
CLUB
CINEMA
ARCADE
1·2·3·4·5·6
PERSONAL

Figure 1

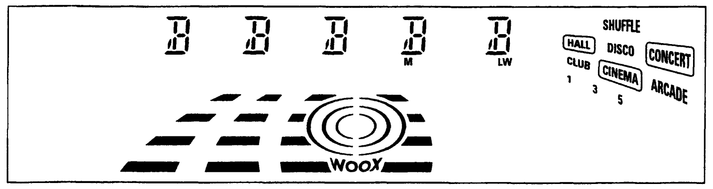
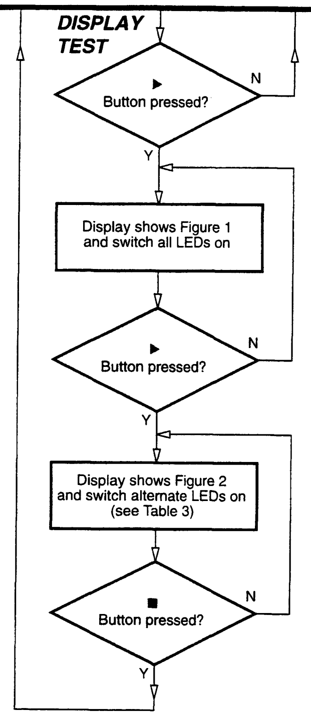

M
LW
SHUFFLE
HALL
DISCO
CONCERT
CLUB
CINEMA
ARCADE
1
3
5
WOOX

Figure 2


DISPLAY TEST
▶ Button pressed?
N
Y
Display shows Figure 1 and switch all LEDs on
▶ Button pressed?
N
Y
Display shows Figure 2 and switch alternate LEDs on (see Table 3)
■ Button pressed?
N
Y

PRESET	Europe "EUR"	East Eur. "EAS"	East Eur. Extended-band "EAS"	USA "USA"	Oversea "OSE"
1	87.5MHz	87.5MHz	65.81MHz	87.5MHz	87.5MHz
2	108MHz	108MHz	108MHz	108MHz	108MHz
3	531kHz	531kHz	74MHz	530kHz	531/530kHz*
4	1602kHz	1602kHz	87.5MHz	1700kHz	1602/1700kHz*
5	558kHz	558kHz	531kHz	560kHz	558/560kHz*
6	1494kHz	1494kHz	1602kHz	1500kHz	1494/1500kHz*
7	153kHz	87.5MHz	558kHz	98MHz	87.5/98MHz*
8	279kHz	87.5MHz	1494kHz	87.5MHz	87.5MHz
9	198kHz	87.5MHz	98MHz	87.5MHz	87.5MHz
10	98MHz	87.5MHz	70.01MHz	87.5MHz	87.5MHz
11	87.5MHz	98MHz	65.81MHz	87.5MHz	98/87.5MHz*

Table 1

Note: * Depending on the selected grid frequency (9 or 10kHz)
By holding the TUNER and ▶▶ buttons depressed while switching on the Mains supply, one of the undermentioned features will be activated:
- the tuning grid frequency is toggled between 9kHz and 10kHz for the Oversea (/21) version.
- the extended FM1 (65.81MHz - 74MHz) is toggled on and off for East Eur. (/34) version.

Error code	Error Description
E1000	Focus Error Triggered when the focus could not be found within a certain time when starting up the CD or when the focus is lost for a certain time during play.
E1001	Radial Error Triggered when the radial servo is off-track for a certain time during play.
E1002	Sledge In Error The sledge did not reach its inner position (inner-switch is still close) before approximately 6 Sec. have passed by. Inner-switch or sledge motor problem.
E1003	Sledge Out Error The sledge did not come out of its inner position (inner-switch is still open) before approximately 250 mSec. have passed by. Inner-switch or sledge motor problem.
E1005	Jump-offtrack error Triggered in normal play when the jump destination could not be found within a certain time. When this error occurred, software will try to recover by initiating the jump command again. If it is recoverable, the disc will continue to play.
E1006	Subcode Error Triggered when a new subcode was missing for a certain time during play.
E1007	PLL Error The Phase Lock Loop could not lock within a certain time.
E1008	Turntable Motor Error Generated when the CD could not reached 75% of speed during startup within a certain time. Discmotor problem.
E1020	Focus Search Error The focus point has not been found within a certain time.
E1070	The carousel switch is not open within certain time. This can happen when either the switch is defective and closed all the time, or when the carousel is blocked when located exactly at a disc position.
E1071	The carousel position switch did not close within a certain time. This can happen when the switch is defective and never closes electrically, or when the carousel is blocked in between two disc positions. The time-out is approximately 5 Sec.
E1079	The drawer could not enter the inside position is opening again. This can be caused because the drawer is blocked by something and cannot go fully inside, or the drawer switch is defective and does not close.

Table 2

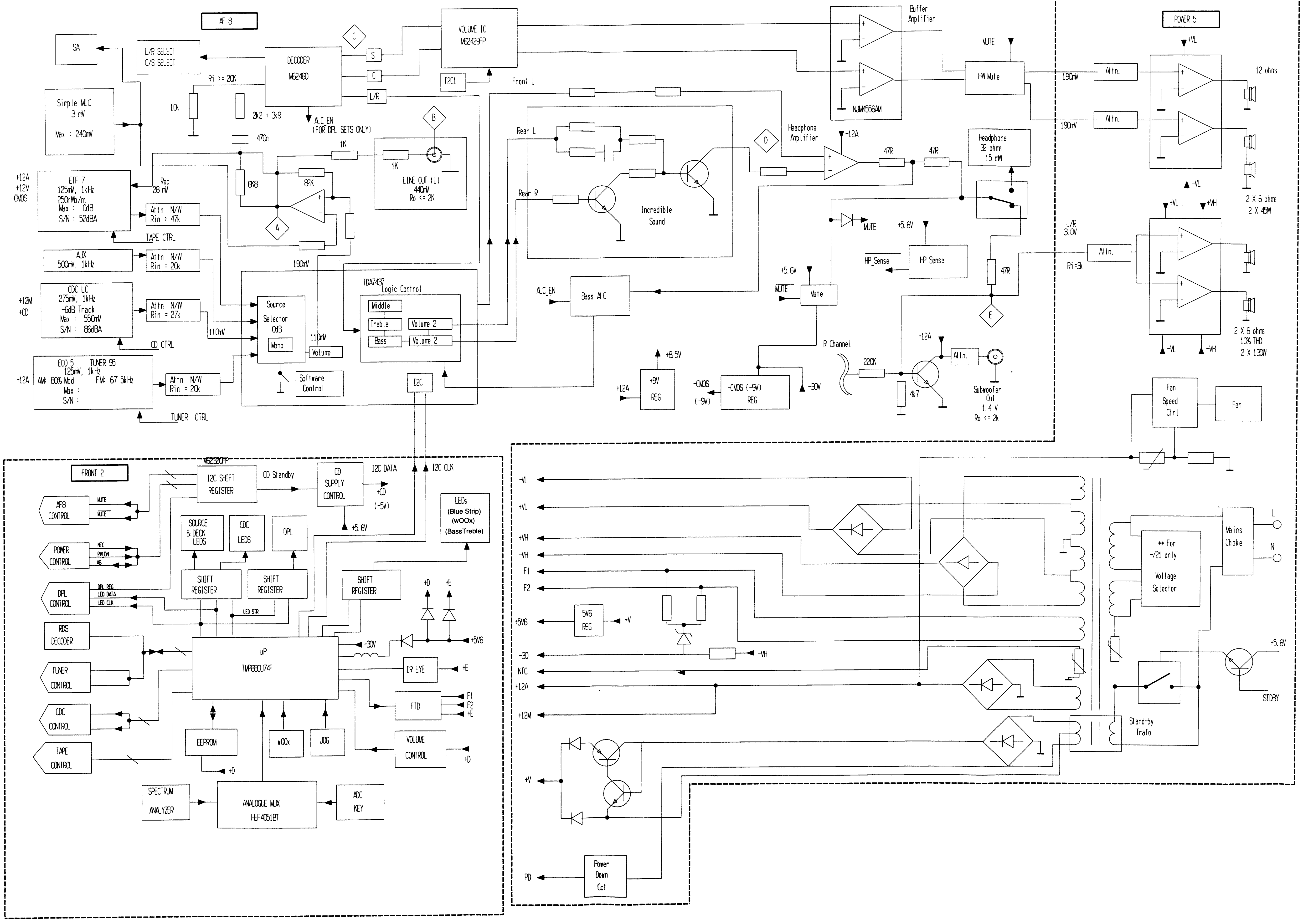
LEDs	FW-C80	FW-C83 , FW-C85 FW-C90	FW-P88
DISC 1	On	On	On
DISC 3	On	On	On
CD	On	On	On
TUNER	On		
TAPE		On	On
DECOR		On	On
BASS	On		
WOOX	On		
DPL CENTRE			On
STEREO RIGHT			On

Table 3

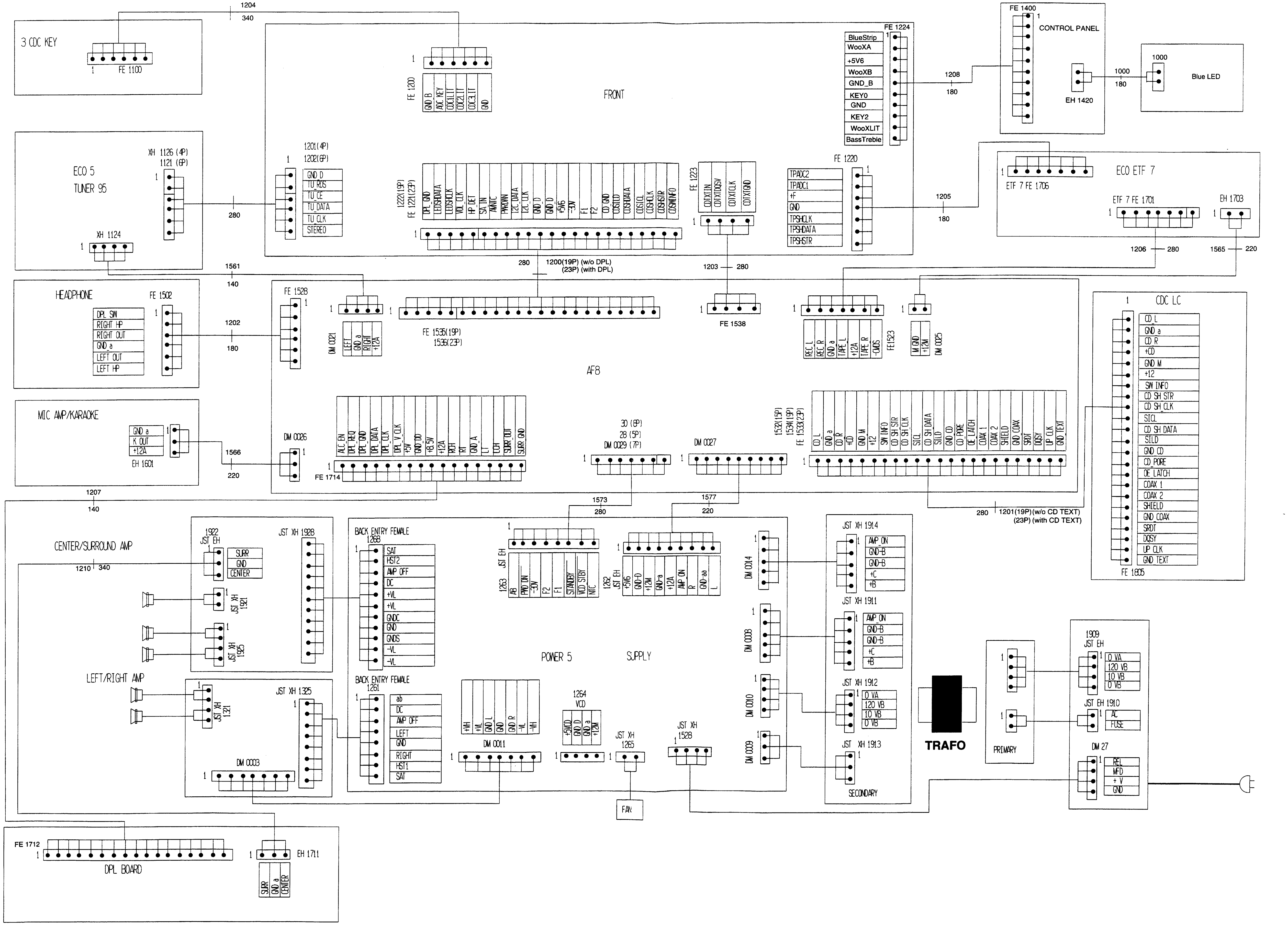
Various other Tests

TEST	***Activated with***	***ACTION***
EEPROM TEST	▶▶ ■ to Exit	A test pattern will be sent to the EEPROM. "PASS" is displayed if the uProcessor read back the test pattern correctly, otherwise "ERROR" will be displayed.
EEPROM FORMAT	◀◀	Load default data. Display shows "NEW" for 1 second. ***Caution!*** ***All presets from the customer will be lost!!***
ROTARY ENCODER TEST	Rotary Volume Knob or Rotary WOOX Knob or Jog Shuttle Knob	Display shows value for 2 seconds. Values increases or decreases in steps of 1 until 0 (Min.) or 40 (Max.) is reached.
LEAVE SERVICE TESTPROGRAM	Disconnect mains cord	

SET BLOCK DIAGRAM


AF 8
SA
L/R SELECT
C/S SELECT
DECODER
M62460
S
C
L/R
VOLUME IC
M62429FP
I2C1
Front L
Ri >= 20K
10k
2k2 + 3k9
470n
ALC EN
(FOR DPL SETS ONLY)
Simple MIC
3 mV
Max : 240mV
+12A
+12M
-CMOS
ETF 7
125mV, 1kHz
250nWb/m
Max : 0dB
S/N : 52dBA
Rec
28 mV
Attn N/W
Rin > 47k
TAPE CTRL
6K8
82K
1K
1K
LINE OUT (L)
440mV
Ro <= 2K
A
B
C
D
E
AUX
500mV, 1kHz
Attn N/W
Rin = 20k
190mV
+12M
+CD
CDC LC
275mV, 1kHz
-6dB Track
Max : 550mV
S/N : 86dBA
Attn N/W
Rin = 27k
CD CTRL
110mV
110mV
+12A
ECO 5 TUNER 95
125mV, 1kHz
AM: 80% Mod FM: 67 5kHz
Max :
S/N :
Attn N/W
Rin = 20k
TUNER CTRL
Source
Selector
0dB
Mono
Volume
Software
Control
TDA7437
Logic Control
Middle
Treble
Bass
Volume 2
Volume 2
I2C
Rear L
Rear R
Incredible
Sound
ALC_EN
Bass ALC
Buffer
Amplifier
NJM4556AM
MUTE
HW Mute
190mV
190mV
Headphone
Amplifier
+12A
47R
47R
Headphone
32 ohms
15 mW
MUTE
+5.6V
HP_Sense
HP Sense
47R
+5.6V
MUTE
Mute
R Channel
220K
4k7
+12A
Attn.
Subwoofer
Out
1.4 V
Ro <= 2k
+8.5V
+12A
+9V
REG
-CMOS
(-9V)
-CMOS (-9V)
REG
-30V
POWER 5
+VL
Attn.
Attn.
12 ohms
-VL
2 X 6 ohms
2 X 45W
L/R
3.0V
Ri=3k
Attn.
+VL
+VH
-VL
-VH
2 X 6 ohms
10% THD
2 X 130W
Fan
Speed
Ctrl
Fan
FRONT 2
M62320FP
I2C SHIFT
REGISTER
CD Standby
CD
SUPPLY
CONTROL
+CD
(+5V)
+5.6V
I2C DATA
I2C CLK
LEDs
(Blue Strip)
(wOOx)
(BassTreble)
AF8
CONTROL
MUTE
MUTE
POWER
CONTROL
NTC
PW DN
AB
SOURCE
& DECK
LEDS
CDC
LEDS
DPL
DPL
CONTROL
DPL REG
LED DATA
LED CLK
SHIFT
REGISTER
SHIFT
REGISTER
SHIFT
REGISTER
LED STR
+D
+E
RDS
DECODER
TUNER
CONTROL
CDC
CONTROL
TAPE
CONTROL
uP
TMP88CU74F
-30V
+5V6
IR EYE
+E
FTD
F1
F2
+E
EEPROM
+D
wOOx
JOG
VOLUME
CONTROL
+D
SPECTRUM
ANALYZER
ANALOGUE MUX
HEF4051BT
ADC
KEY
-VL
+VL
+VH
-VH
F1
F2
+5V6
5V6
REG
+V
-30
-VH
NTC
+12A
+12M
+V
PD
Power
Down
Cct
Mains
Choke
L
N
** For
-/21 only
Voltage
Selector
+5.6V
STDBY
Stand-by
Trafo

SET WIRING DIAGRAM


1204
340
3 CDC KEY
FE 1100
FE 1200
GND B
ADC KEY
CDC1LIT
CDC2LIT
CDC3LIT
GND
FRONT
BlueStrip
WooXA
+5V6
WooXB
GND_B
KEY0
GND
KEY2
WooXLIT
BassTreble
FE 1224
FE 1400
CONTROL PANEL
1208
180
EH 1420
1000
180
1000
Blue LED
ECO 5
TUNER 95
XH 1126 (4P)
1121 (6P)
XH 1124
280
1201(4P)
1202(6P)
GND D
TU_RDS
TU_CE
TU_DATA
TU_CLK
STEREO
1222(19P)
FE 1221(23P)
DPL GND
LEDSHDATA
LEDSHCLK
VOL CLK
HP_DET
SA IN
AMATC
PWRDWN
I2C_DATA
I2C_CLK
GND_D
GND_D
+5V6
-30V
F1
F2
CD_GND
CDSTLD
CDSHDATA
CDSICL
CDSHCLK
CDSHSTR
CDSWINFO
FE 1223
CDTXTIN
CDTXTDQSY
CDTXTCLK
CDTXTGND
FE 1220
TPADC2
TPADC1
+F
GND
TPSHCLK
TPSHDATA
TPSHSTR
1205
180
ECO ETF 7
ETF 7 FE 1706
ETF 7 FE 1701
EH 1703
1206
280
1565
220
1561
140
280
1200(19P) (w/o DPL)
(23P) (with DPL)
1203
280
HEADPHONE
FE 1502
DPL SW
RIGHT HP
RIGHT OUT
GND a
LEFT OUT
LEFT HP
1202
180
FE 1528
DM 0021
LEFT
GND a
RIGHT
+12A
FE 1535(19P)
1536(23P)
FE 1538
REC_L
REC_R
GND a
TAPE_L
+12A
TAPE_R
-CASS
FE 1523
M GND
+12M
DM 0025
AF8
CDC LC
CD_L
GND a
CD R
+CD
GND M
+12
SW INFO
CD SH STR
CD SH CLK
SICL
CD SH DATA
STLD
GND CD
CD PORE
OE LATCH
COAX 1
COAX 2
SHIELD
GND COAX
SROT
DQSY
UP CLK
GND TEXT
FE 1805
MIC AMP/KARAOKE
GND a
K OUT
+12A
EH 1601
1566
220
DM 0026
FE 1714
ALC EN
DPL REQ
DPL GND
DPL DATA
DPL CLK
DPL V CLK
+5V
GND DD
+8.5V
+12A
REFT
RT
GND A
LT
LCH
SURR OUT
SURR GND
30 (6P)
28 (5P)
DM 0029 (7P)
DM 0027
1532(15P)
1534(19P)
FE 1533(23P)
CD_L
GND a
CD_R
+CD
GND M
+12
SW INFO
CD SH STR
CD SH CLK
SICL
CD SH DATA
STLD
GND CD
CD PORE
OE LATCH
COAX 1
COAX 2
SHIELD
GND COAX
SROT
DQSY
UP CLK
GND TEXT
1207
140
1573
280
1577
220
280
1201(19P)(w/o CD TEXT)
(23P) (with CD TEXT)
CENTER/SURROUND AMP
1922
JST EH
SURR
GND
CENTER
JST XH 1928
1210
340
JST XH 1921
JST XH 1925
BACK ENTRY FEMALE
1268
SAT
HST2
AMP OFF
DC
+VL
+VL
GNDC
GND
GNDS
-VL
-VL
JST EH
1263
AB
PWD ON
-30V
F2
F1
STANDBY
VCD STBY
NTC
1262
JST EH
+5V6
GND-D
+12M
GND-a
+12A
AMP ON
R
GND-aa
L
DM 0014
DM 0008
DM 0010
DM 0009
JST XH 1914
AMP ON
GND-B
GND-B
+C
+B
JST XH 1911
AMP ON
GND-B
GND-B
+C
+B
JST XH 1912
0 VA
120 VB
10 VB
0 VB
JST XH 1913
SECONDARY
TRAFO
PRIMARY
1909
JST EH
0 VA
120 VB
10 VB
0 VB
JST EH 1910
AC
FUSE
DM 27
REL
MFD
+ V
GND
POWER 5
SUPPLY
LEFT/RIGHT AMP
JST XH 1321
JST XH 1325
DM 0003
BACK ENTRY FEMALE
1261
ab
DC
AMP OFF
LEFT
GND
RIGHT
HST1
SAT
+VH
+VL
GND_L
GND
GND R
-VL
-VH
DM 0011
1264
VCD
+5VCD
GND_D
GND a
+12M
JST XH
1265
FAN
JST XH
1528
FE 1712
DPL BOARD
EH 1711
SURR
GND a
CENTER

FRONT BOARD

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Front Board - Circuit diagram 6-3
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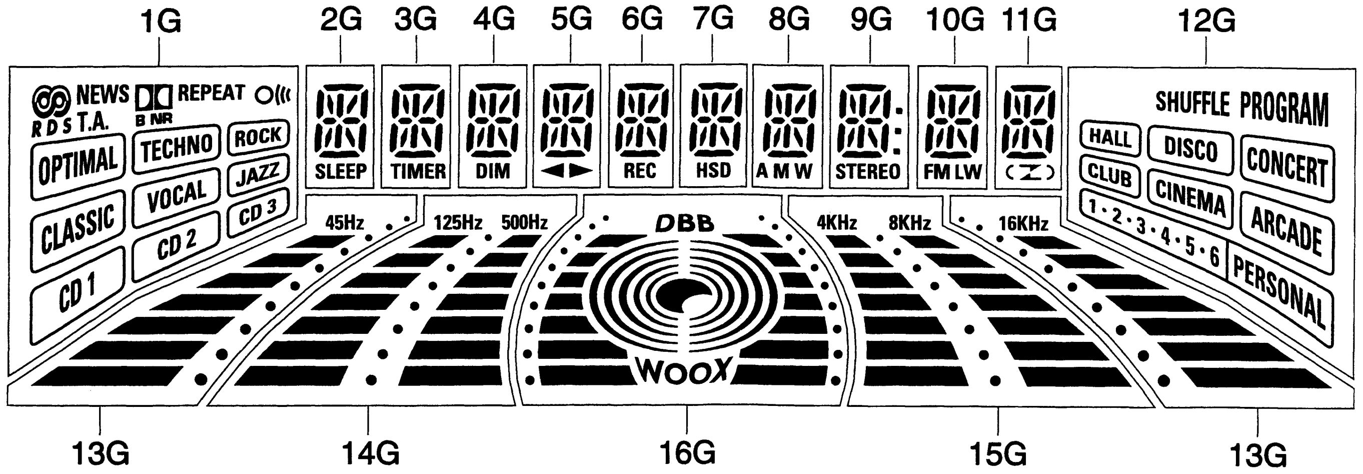
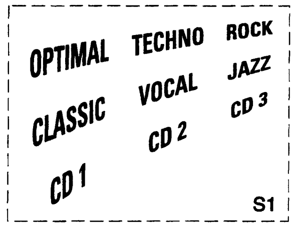
FTD DISPLAY PIN CONNECTIONS

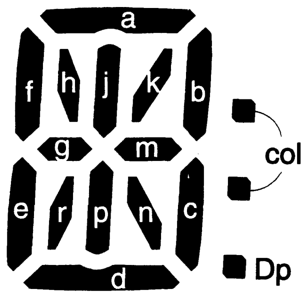


1G
2G
3G
4G
5G
6G
7G
8G
9G
10G
11G
12G
NEWS
RDS T.A.
B NR
REPEAT
OPTIMAL
TECHNO
ROCK
CLASSIC
VOCAL
JAZZ
CD 1
CD 2
CD 3
SLEEP
TIMER
DIM
REC
HSD
A M W
STEREO
FM LW
SHUFFLE
PROGRAM
HALL
DISCO
CONCERT
CLUB
CINEMA
ARCADE
1 · 2 · 3 · 4 · 5 · 6
PERSONAL
45Hz
125Hz
500Hz
DBB
4KHz
8KHz
16KHz
WOOX
13G
14G
16G
15G
13G



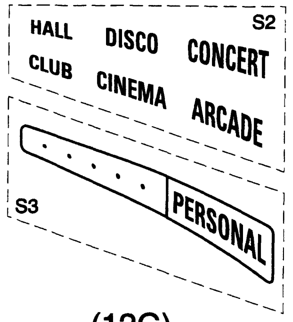
OPTIMAL
TECHNO
ROCK
CLASSIC
VOCAL
JAZZ
CD 1
CD 2
CD 3
S1

(1G)



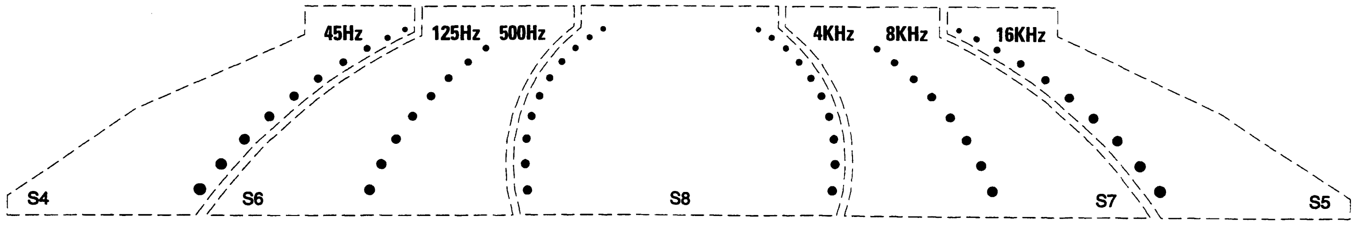
a
f
h
j
k
b
g
m
col
e
r
p
n
c
d
Dp

(2G~11G)



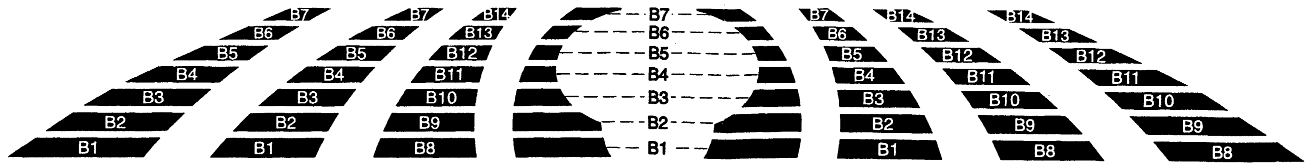
HALL
DISCO
CONCERT
S2
CLUB
CINEMA
ARCADE
S3
PERSONAL

(12G)



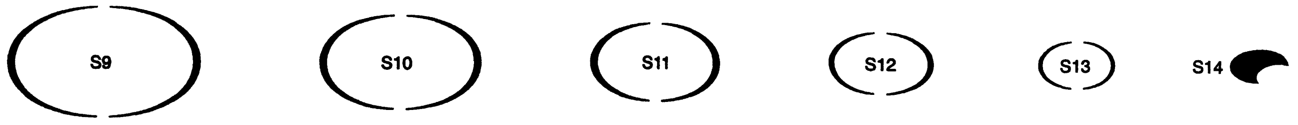
45Hz
125Hz
500Hz
4KHz
8KHz
16KHz
S4
S6
S8
S7
S5

(13G) (14G) (16G) (15G) (13G)



B7
B6
B5
B4
B3
B2
B1
B14
B13
B12
B11
B10
B9
B8

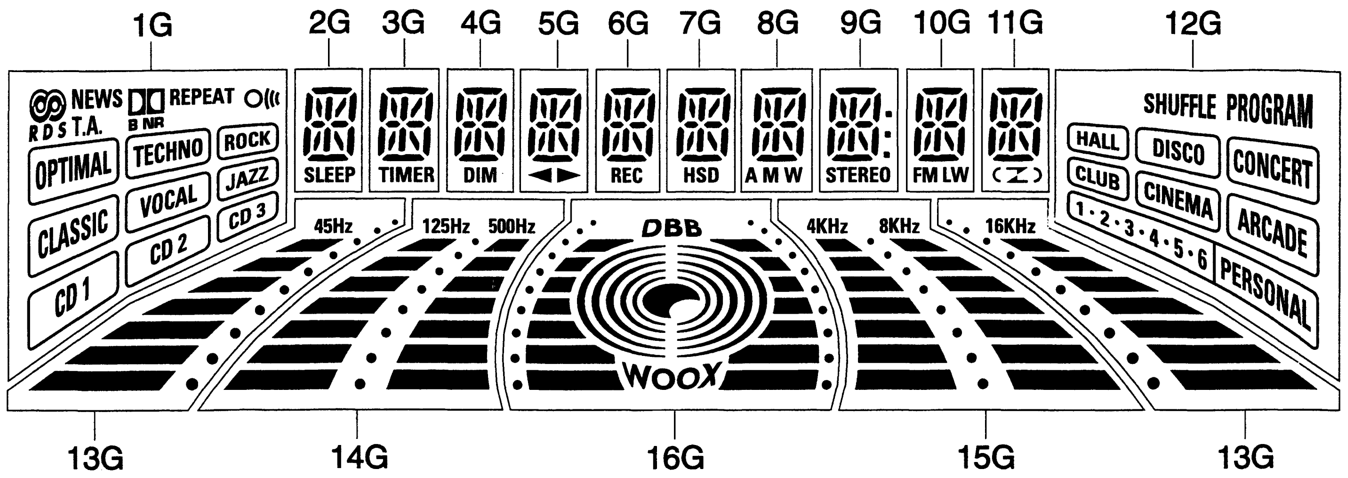
(13G) (14G) (16G) (15G) (13G)

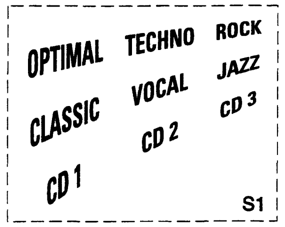


S9
S10
S11
S12
S13
S14

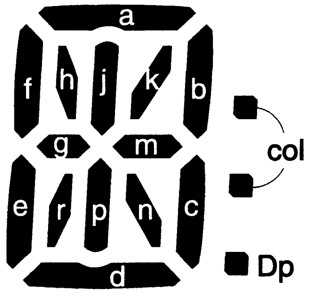
(16G)

FTD DISPLAY PIN CONNECTIONS

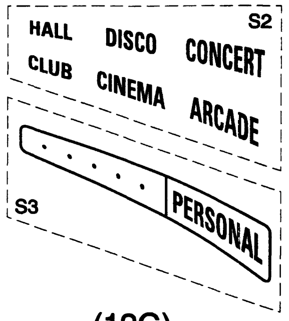

1G
2G
3G
4G
5G
6G
7G
8G
9G
10G
11G
12G
RDS
NEWS
T.A.
B NR
REPEAT
OPTIMAL
TECHNO
ROCK
JAZZ
CLASSIC
VOCAL
CD 3
CD 2
CD 1
SLEEP
TIMER
DIM
REC
HSD
A M W
STEREO
FM LW
SHUFFLE
PROGRAM
HALL
DISCO
CONCERT
CLUB
CINEMA
ARCADE
1·2·3·4·5·6
PERSONAL
45Hz
125Hz
500Hz
DBB
4KHz
8KHz
16KHz
WOOX
13G
14G
16G
15G
13G


OPTIMAL
TECHNO
ROCK
JAZZ
CLASSIC
VOCAL
CD 3
CD 2
CD 1
S1

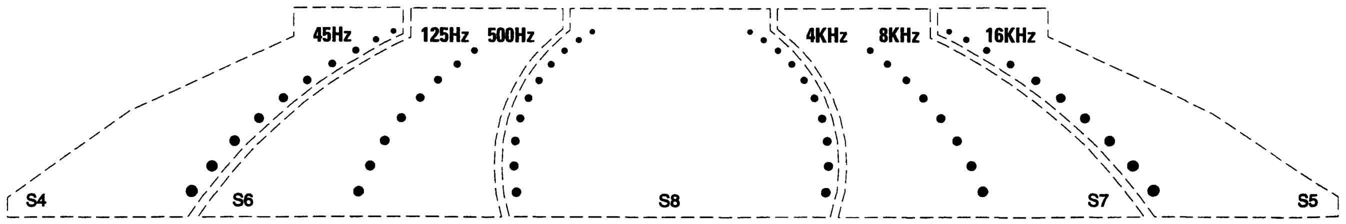
(1G)


a
f
h
j
k
b
g
m
e
r
p
n
c
d
col
Dp

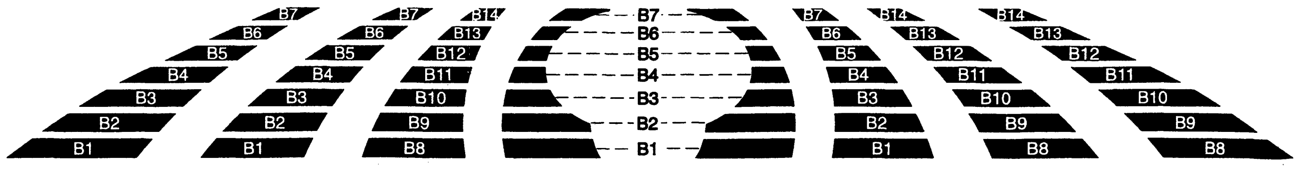
(2G~11G)


S2
HALL
DISCO
CONCERT
CLUB
CINEMA
ARCADE
S3
PERSONAL

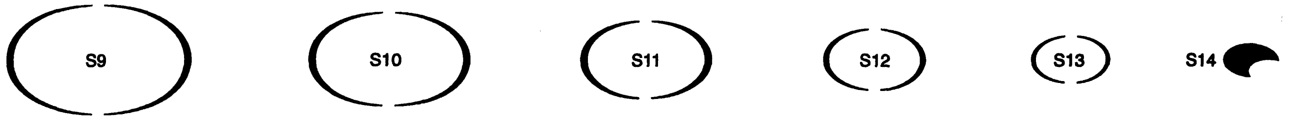
(12G)


45Hz
125Hz
500Hz
4KHz
8KHz
16KHz
S4
S6
S8
S7
S5

(13G) (14G) (16G) (15G) (13G)


B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14

(13G) (14G) (16G) (15G) (13G)


S9
S10
S11
S12
S13
S14

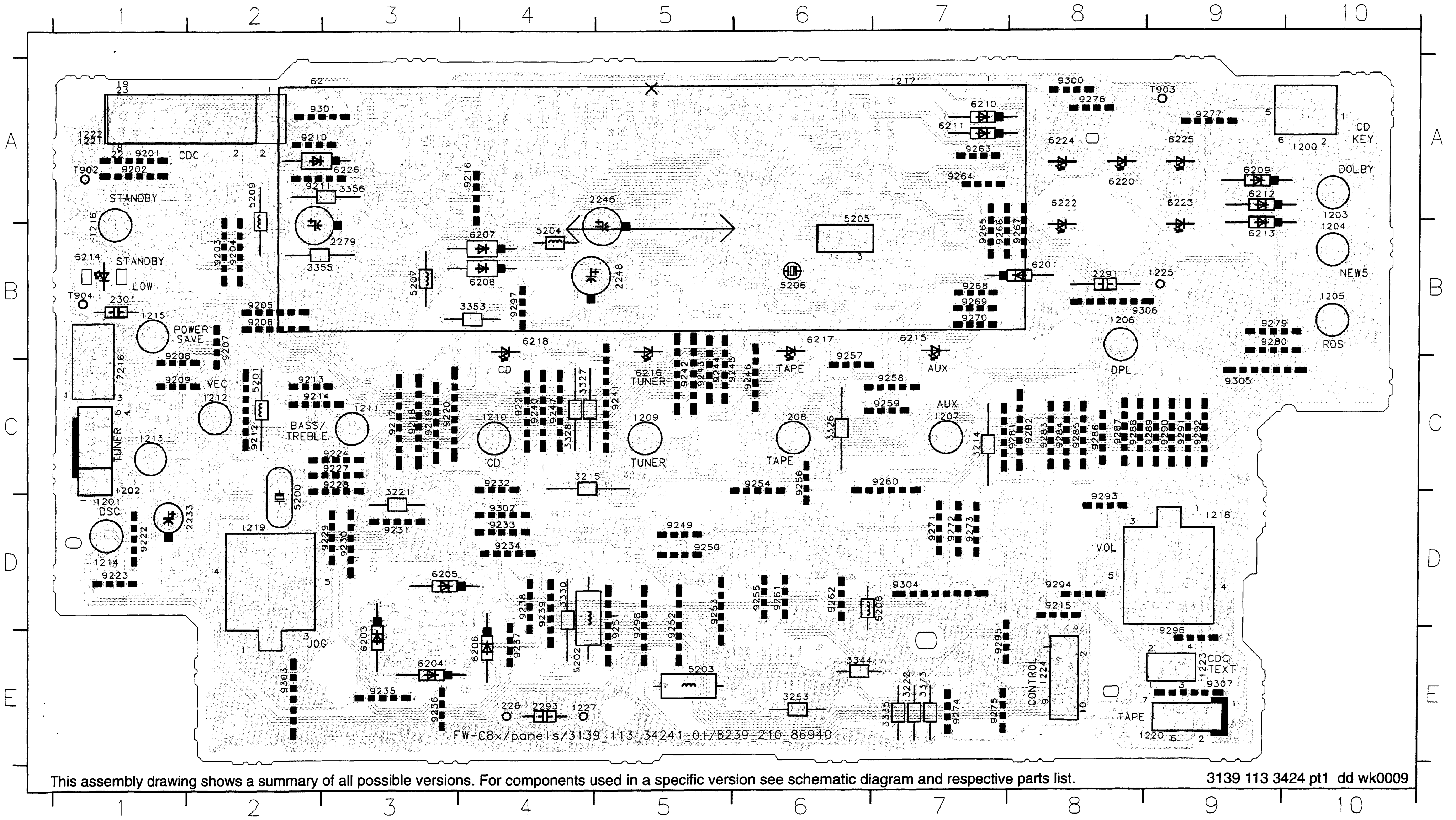
(16G)

FTD DISPLAY PIN CONNECTIONS

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	14G	15G	16G
P1	RDS	a	a	a	a	a	a	a	a	a	a	SHUFFLE	B1	B1	B1	B1
P2	NEWS	h	h	h	h	h	h	h	h	h	h	PROGRAM	B2	B2	B2	B2
P3	T.A.	j , p	j , p	j , p	j , p	j , p	j , p	j , p	j , p	j , p	j , p	(HALL)	B3	B3	B3	B3
P4	B NR	k	k	k	k	k	k	k	k	k	k	(DISCO)	B4	B4	B4	B4
P5	REPEAT	b	b	b	b	b	b	b	b	b	b	(CONCERT)	B5	B5	B5	B5
P6	O(((	f	f	f	f	f	f	f	f	f	f	(CLUB)	B6	B6	B6	B6
P7	(OPTIMAL)	m	m	m	m	m	m	m	m	m	m	(CINEMA)	B7	B7	B7	B7
P8	(TECHNO)	g	g	g	g	g	g	g	g	g	g	(ARCADE)	S4	S6	S7	S8
P9	(ROCK)	c	c	c	c	c	c	c	c	c	c	S2	B8	B8	B8	S9
P10	(CLASSIC)	e	e	e	e	e	e	e	e	e	e	S3	B9	B9	B9	S10
P11	(VOCAL)	r	r	r	r	r	r	r	r	r	r	1	B10	B10	B10	S11
P12	(JAZZ)	n	n	n	n	n	n	n	n	n	n	2	B11	B11	B11	S12
P13	(CD 1)	d	d	d	d	d	d	d	d	d	d	3	B12	B12	B12	S13
P14	(CD 2)	SLEEP	TIMER	DIM	►	REC	HSD	A	STEREO	FM	Z	4	B13	B13	B13	S14
P15	(CD 3)	-	-	-	◄	-	-	M	col	LW	(	5	B14	B14	B14	WOOX
P16	S1	-	-	-	-	-	-	W	Dp	-	)	6	S5	-	-	DBB

FRONT BOARD - COMPONENT LAYOUT

1200	A10	1212	C2	1224	E8	3215	C4	3356	A3	6201	B8	6214	B1	9201	A1	9213	C2	9227	C3	9239	D4	9252	D5	9264	A7	9276	A8	9289	C9	9302	D4
1201	D1	1213	C1	1225	B9	3221	C3	3373	E7	6203	E3	6215	B7	9202	A1	9214	C2	9228	C3	9240	C4	9253	D5	9265	B7	9277	A9	9290	C9	9303	E2
1202	C1	1214	D1	1226	E4	3222	E7	5200	D2	6204	E3	6216	C5	9203	B2	9215	D8	9229	D3	9241	C5	9254	C6	9266	B7	9279	B9	9291	C9	9304	D7
1203	A10	1215	B1	1227	E4	3253	E6	5201	C2	6205	D3	6217	B6	9204	B2	9216	A4	9230	D3	9242	C5	9255	D6	9267	B8	9280	B9	9292	C9	9305	C9
1204	B10	1216	B1	2233	D2	3326	C6	5202	E4	6206	E4	6218	B4	9205	B2	9217	C3	9231	D3	9243	C5	9256	C6	9268	B7	9281	C8	9293	D8	9306	B8
1205	B10	1217	A7	2246	A5	3327	C4	5203	E5	6207	B4	6220	A8	9206	B2	9218	C3	9232	C4	9244	C5	9257	B6	9269	B7	9282	C8	9294	D8	9307	E9
1206	B8	1218	D9	2248	B5	3328	C4	5204	B4	6208	B4	6222	A8	9207	B2	9219	C3	9233	D4	9245	C5	9258	C7	9270	B7	9283	C8	9295	E7	T902	A1
1207	C7	1219	D2	2279	B3	3330	D4	5205	A6	6209	A9	6223	A9	9208	B1	9220	C3	9234	D4	9246	C6	9259	C7	9271	D7	9284	C8	9296	E9	T903	A9
1208	C6	1220	E9	2291	B8	3335	E7	5206	B6	6210	A7	6224	A8	9209	C1	9221	C4	9235	E3	9247	C4	9260	C7	9272	D7	9285	C8	9297	B4	T904	B1
1209	C5	1221	A1	2293	E4	3344	E6	5207	B3	6211	A7	6225	A9	9210	A2	9222	D1	9236	E3	9249	D5	9261	D6	9273	D7	9286	C8	9298	D5		
1210	C4	1222	A1	2301	B1	3353	B4	5208	D7	6212	A9	6226	A3	9211	A2	9223	D1	9237	E4	9250	D5	9262	D6	9274	E7	9287	C8	9300	A8		
1211	C3	1223	E9	3214	C7	3355	B2	5209	A2	6213	B9	7216	C1	9212	C2	9224	C3	9238	D4	9251	D5	9263	A7	9275	E7	9288	C8	9301	A3		

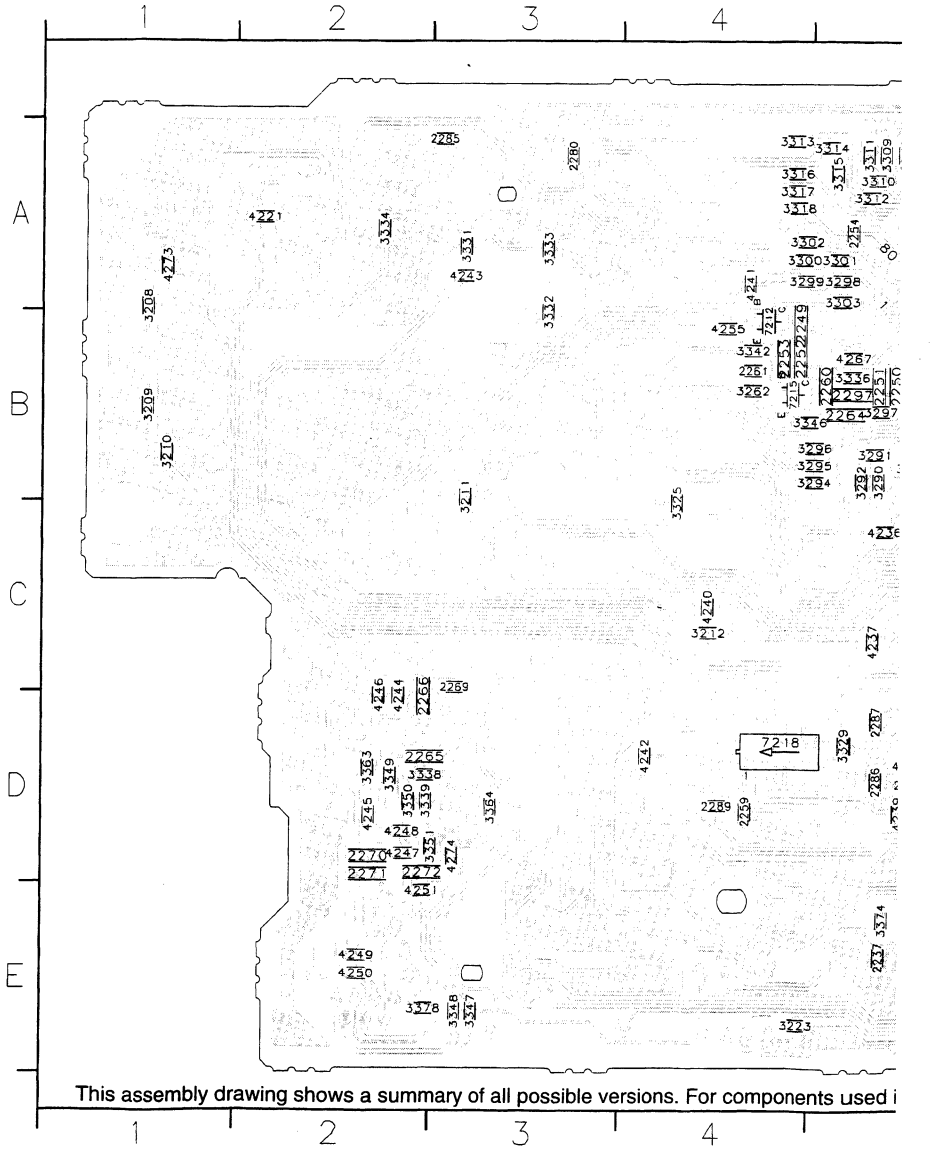


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3424 pt1 dd wk0009

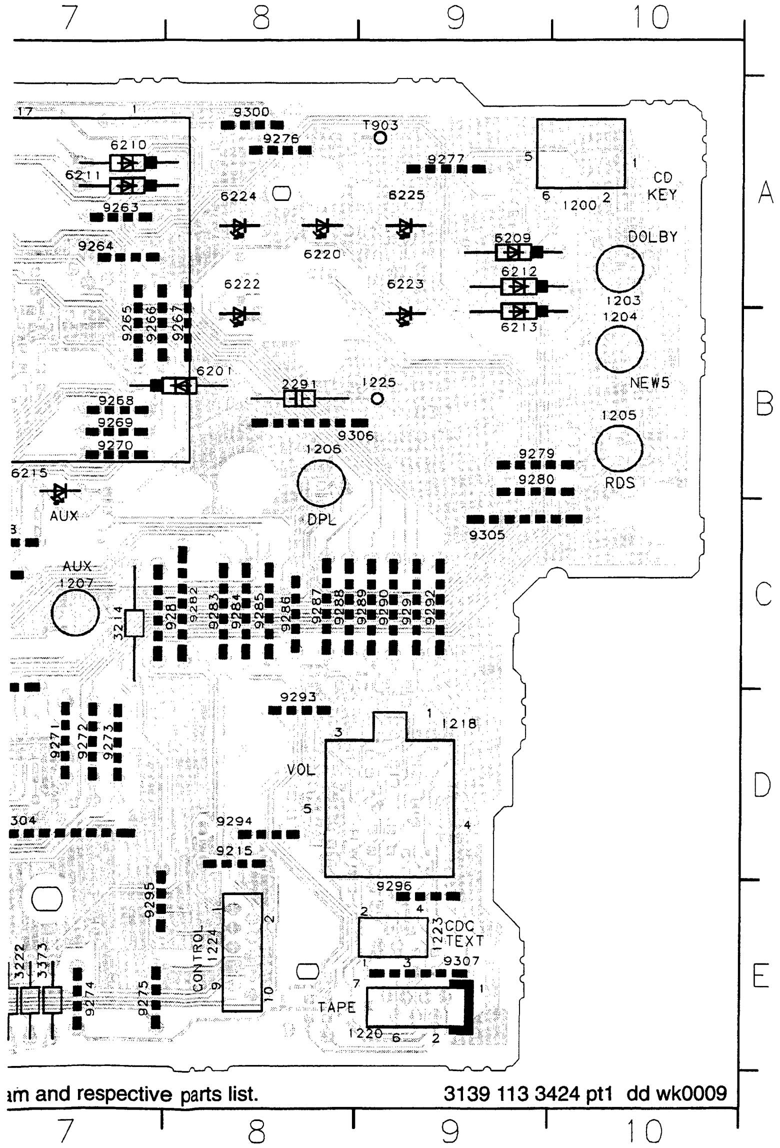
FRONT BOARD - CHIP LAYOUT

2200	A7	2230	D10	2253	B4	2273	B8	2297	B5	3223	E4	3243	D8	326
2201	A7	2231	D10	2254	A5	2274	A8	2298	A9	3224	C10	3244	D7	326
2202	A7	2232	D10	2255	B8	2275	A9	2299	A10	3225	C10	3245	D8	326
2204	A7	2234	D9	2256	D5	2276	B10	2300	A10	3226	C10	3246	D7	326
2205	A7	2235	D9	2257	D6	2277	B10	3200	A7	3227	C10	3247	E8	326
2206	A7	2236	D9	2258	D6	2278	B10	3201	A7	3228	C10	3248	E8	326
2208	A7	2237	E5	2259	D4	2280	A3	3202	A8	3229	C10	3249	E8	327
2209	A7	2238	D8	2260	B5	2281	B8	3204	A8	3230	C10	3250	B6	327
2210	A8	2239	E8	2261	B4	2282	B8	3205	A8	3231	C10	3251	B7	327
2212	A8	2240	D8	2262	C10	2283	A8	3208	A1	3232	D9	3252	B6	327
2213	A8	2241	D8	2263	B10	2284	A10	3209	B1	3233	D9	3254	B6	327
2216	A7	2242	D8	2264	B5	2285	A3	3210	B1	3234	D9	3255	B6	327
2217	A8	2243	E8	2265	D2	2286	D5	3211	B3	3235	C9	3256	B6	327
2220	A8	2244	E7	2266	D2	2287	D5	3212	C4	3236	C9	3257	B6	327
2221	A8	2245	E8	2267	D9	2288	D5	3213	C5	3237	D9	3258	B6	327
2225	D10	2247	B6	2268	D9	2289	D4	3216	C10	3238	E8	3259	B6	327
2226	C10	2249	B4	2269	C3	2290	D6	3217	C9	3239	E8	3260	B6	327
2227	C10	2250	B5	2270	D2	2292	A6	3218	B10	3240	E8	3261	B6	328
2228	C10	2251	B5	2271	D2	2294	A6	3219	B10	3241	E8	3262	B4	328
2229	C10	2252	B4	2272	D2	2296	A6	3220	C8	3242	D8	3263	A7	328



This assembly drawing shows a summary of all possible versions. For components used i

D4	9252	D5	9264	A7	9276	A8	9289	C9	9302	D4
C4	9253	D5	9265	B7	9277	A9	9290	C9	9303	E2
C5	9254	C6	9266	B7	9279	B9	9291	C9	9304	D7
C5	9255	D6	9267	B8	9280	B9	9292	C9	9305	C9
C5	9256	C6	9268	B7	9281	C8	9293	D8	9306	B8
C5	9257	B6	9269	B7	9282	C8	9294	D8	9307	E9
C5	9258	C7	9270	B7	9283	C8	9295	E7	T902	A1
C6	9259	C7	9271	D7	9284	C8	9296	E9	T903	A9
C4	9260	C7	9272	D7	9285	C8	9297	B4	T904	B1
D5	9261	D6	9273	D7	9286	C8	9298	D5		
D5	9262	D6	9274	E7	9287	C8	9300	A8		
D5	9263	A7	9275	E7	9288	C8	9301	A3		


7
8
9
10
A
B
C
D
E
9300
9276
T903
9277
CD KEY
1200
6210
6211
9263
6224
6225
DOLBY
6209
6212
6220
9264
6222
6223
1203
1204
6213
6201
2291
1225
NEWS
9268
9269
9270
9306
1205
1206
9279
RDS
9280
6215
AUX
DPL
9305
AUX 1207
3214
9293
1218
VOL
9294
9215
9296
CONTROL 1224
1223 CDC TEXT
9307
TAPE
1220
3222
3373
9274
9275
9295

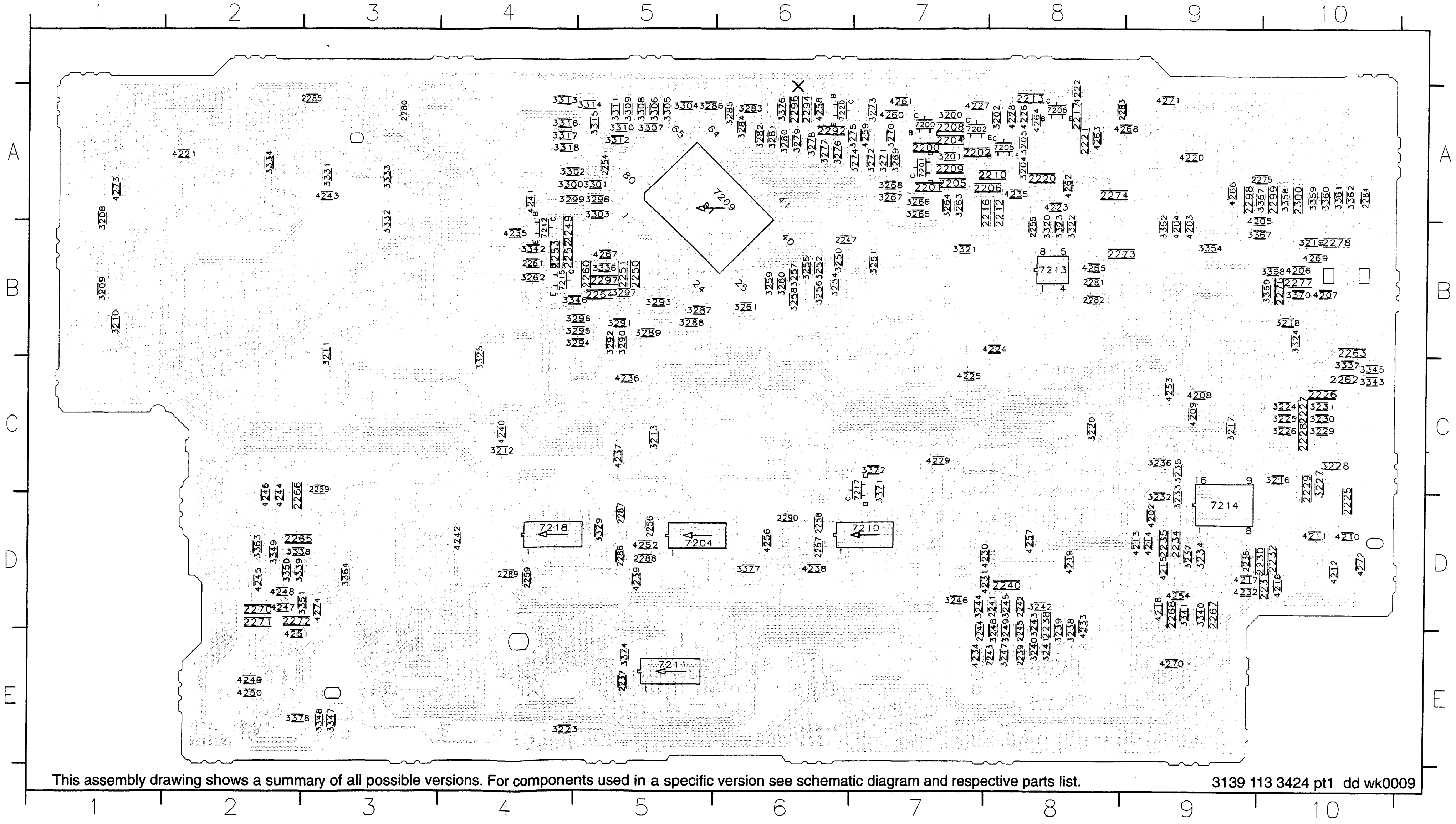
am and respective parts list. 3139 113 3424 pt1 dd wk0009

FRONT BOARD - CHIP LAYOUT

2200	A7	2230	D10	2253	B4	2273	B8	2297	B5	3223	E4
2201	A7	2231	D10	2254	A5	2274	A8	2298	A9	3224	C10
2202	A7	2232	D10	2255	B8	2275	A9	2299	A10	3225	C10
2204	A7	2234	D9	2256	D5	2276	B10	2300	A10	3226	C10
2205	A7	2235	D9	2257	D6	2277	B10	3200	A7	3227	C10
2206	A7	2236	D9	2258	D6	2278	B10	3201	A7	3228	C10
2208	A7	2237	E5	2259	D4	2280	A3	3202	A8	3229	C10
2209	A7	2238	D8	2260	B5	2281	B8	3204	A8	3230	C10
2210	A8	2239	E8	2261	B4	2282	B8	3205	A8	3231	C10
2212	A8	2240	D8	2262	C10	2283	A8	3208	A1	3232	D9
2213	A8	2241	D8	2263	B10	2284	A10	3209	B1	3233	D9
2216	A7	2242	D8	2264	B5	2285	A3	3210	B1	3234	D9
2217	A8	2243	E8	2265	D2	2286	D5	3211	B3	3235	C9
2220	A8	2244	E7	2266	D2	2287	D5	3212	C4	3236	C9
2221	A8	2245	E8	2267	D9	2288	D5	3213	C5	3237	D9
2225	D10	2247	B6	2268	D9	2289	D4	3216	C10	3238	E8
2226	C10	2249	B4	2269	C3	2290	D6	3217	C9	3239	E8
2227	C10	2250	B5	2270	D2	2292	A6	3218	B10	3240	E8
2228	C10	2251	B5	2271	D2	2294	A6	3219	B10	3241	E8
2229	C10	2252	B4	2272	D2	2296	A6	3220	C8	3242	D8

3243	D8	3264	A7	3284	A6	3304	A5	3325	C4	3351	D3
3244	D7	3265	A7	3285	A6	3305	A5	3329	D5	3352	B9
3245	D8	3266	A7	3286	A5	3306	A5	3331	A3	3354	B9
3246	D7	3267	A7	3287	B5	3307	A5	3332	B3	3357	A9
3247	E8	3268	A7	3288	B5	3308	A5	3333	A3	3358	A10
3248	E8	3269	A7	3289	B5	3309	A5	3334	A2	3359	A10
3249	E8	3270	A7	3290	B5	3310	A5	3336	B5	3360	A10
3250	B6	3271	A7	3291	B5	3311	A5	3337	C10	3361	A10
3251	B7	3272	A7	3292	B5	3312	A5	3338	D2	3362	A10
3252	B6	3273	A7	3293	B5	3313	A4	3339	D2	3363	D2
3254	B6	3274	A7	3294	B5	3314	A5	3340	D9	3364	D3
3255	B6	3275	A6	3295	B5	3315	A5	3341	D9	3367	B9
3256	B6	3276	A6	3296	B5	3316	A4	3342	B4	3368	B10
3257	B6	3277	A6	3297	B5	3317	A4	3343	C10	3369	B10
3258	B6	3278	A6	3298	A5	3318	A4	3345	C10	3370	B10
3259	B6	3279	A6	3299	A4	3320	B8	3346	B4	3371	C7
3260	B6	3280	A6	3300	A4	3321	B7	3347	E3	3372	C7
3261	B6	3281	A6	3301	A5	3322	B8	3348	E3	3374	E5
3262	B4	3282	A6	3302	A4	3323	B8	3349	D2	3376	A6
3263	A7	3283	A6	3303	A5	3324	B10	3350	D2	3377	D6

3378	E2	4221	A2	4241	A4	4261	A7	7209	A6
4202	D9	4222	A8	4242	D4	4262	A8	7210	D7
4203	B9	4223	A8	4243	A3	4263	A8	7211	E5
4204	B9	4224	B8	4244	D2	4264	A8	7212	B4
4205	A9	4225	C7	4245	D2	4265	B8	7213	B8
4206	B10	4226	A8	4246	D2	4266	A9	7214	D9
4207	B10	4227	A7	4247	D2	4267	B5	7215	B4
4208	C9	4228	A8	4248	D2	4268	A9	7217	C7
4209	C9	4229	C7	4249	E2	4269	B10	7218	D4
4210	D10	4230	D7	4250	E2	4270	E9	7220	A6
4211	D10	4231	D7	4251	E2	4271	A9		
4212	D10	4232	D9	4252	D5	4272	D10		
4213	D9	4233	D8	4253	C9	4273	A1		
4214	D9	4234	E7	4254	D9	4274	D3		
4215	D9	4235	A8	4255	B4	7200	A7		
4216	D10	4236	C5	4256	D6	7201	A7		
4217	D9	4237	C5	4257	D8	7202	A7		
4218	D9	4238	D6	4258	A6	7204	D5		
4219	D8	4239	D5	4259	A7	7205	A8		
4220	A9	4240	C4	4260	A7	7206	A8		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7209
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7204
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7211

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list. 3139 113 3424 pt1 dd wk0009

FRONT BOARD - CIRCUIT DIAGRAM

1200	D1
1201	I1
1202	H1
1203	E3
1204	E3
1205	E3
1206	E4
1207	E4
1208	E5
1209	E5
1210	F5
1211	F5
1212	F4
1213	F3
1214	F3
1215	F4
1216	F4
1217	B10
1218	J13
1219	J15
1220	C21
1221	D21
1222	E21
1223	H21
1224	I21
1225	C8
1226	D7
1227	D8
1902	K20
1903	K20
1904	K11
2200	B3
2201	B4
2202	B5
2204	B3
2205	B4
2206	B5
2208	B3
2209	B4
2210	B6
2212	C3
2213	C4
2216	D3
2217	D4
2220	D4
2221	D5
2225	H2
2226	I2
2227	I2
2228	I3
2229	I3
2230	I1
2231	I1
2232	J1
2233	K1
2234	I4
2235	I4
2236	I5
2237	E7
2238	H8
2239	I7
2240	I8
2241	J7
2242	J8
2243	J8
2244	J7
2245	J8
2246	D9
2247	D10
2248	D8
2249	G13
2250	G12
2251	G12
2252	H12
2253	H13
2254	F14
2255	H14
2256	A17
2257	B15
2258	D17
2259	D15
2260	J12
2261	J13
2262	K10
2263	K11
2264	K12
2265	K14
2266	K14
2267	K15
2268	K16
2269	D19
2270	D20
2271	D20
2272	D20
2273	F20
2274	F20
2275	G20
2276	G19
2277	H19
2278	H20
2279	J17
2280	J19
2281	K17
2282	K17
2283	K19
2284	K20
2285	K20
2286	A17
2287	D17
2288	H15
2289	G17
2290	G17
2291	C7
2292	B6
2293	D7
2294	B6
2296	B7
2297	J12
2298	G20
2299	G20
2300	G20
2301	K11
2302	E16
3200	B3
3201	B4
3202	B5
3204	D3
3205	D4
3208	E3
3209	E3
3210	E3
3211	E4
3212	E4
3213	E5
3214	E5
3215	E5
3216	F3
3217	F3
3218	F4
3219	F4
3220	F4
3221	F5
3222	F5
3223	F5
3224	H2
3225	H2
3226	H3
3227	H2
3228	H2
3229	H2
3230	H2
3231	H2
3232	I4
3233	I4
3234	J5
3235	J5
3236	J5
3237	J6
3238	H8
3239	H9
3240	I7
3241	I8
3242	I8
3243	I8
3244	J7
3245	J8
3246	J7
3247	J8
3248	J7
3249	J8
3250	E10
3251	E10
3252	E10
3253	E9
3254	E10
3255	E10
3256	E10
3257	E10
3258	F10
3259	F10
3260	F10
3261	F10
3262	G10
3263	C10
3264	C10
3265	C11
3266	C11
3267	C11
3268	C11
3269	C11
3270	C11
3271	C11
3272	C12
3273	C12
3274	C12
3275	C12
3276	C12
3277	C12
3278	C12
3279	C13
3280	C13
3281	C13
3282	C13
3283	C13
3284	C13
3285	C13
3286	C14
3287	G10
3288	G10
3289	G10
3290	G11
3291	G11
3292	G11
3293	G11
3294	G11
3295	G11
3296	G11
3297	G11
3298	G13
3299	G13
3300	G13
3301	G13
3302	G14
3303	H13
3304	D14
3305	D14
3306	D14
3307	D14
3308	E14
3309	E14
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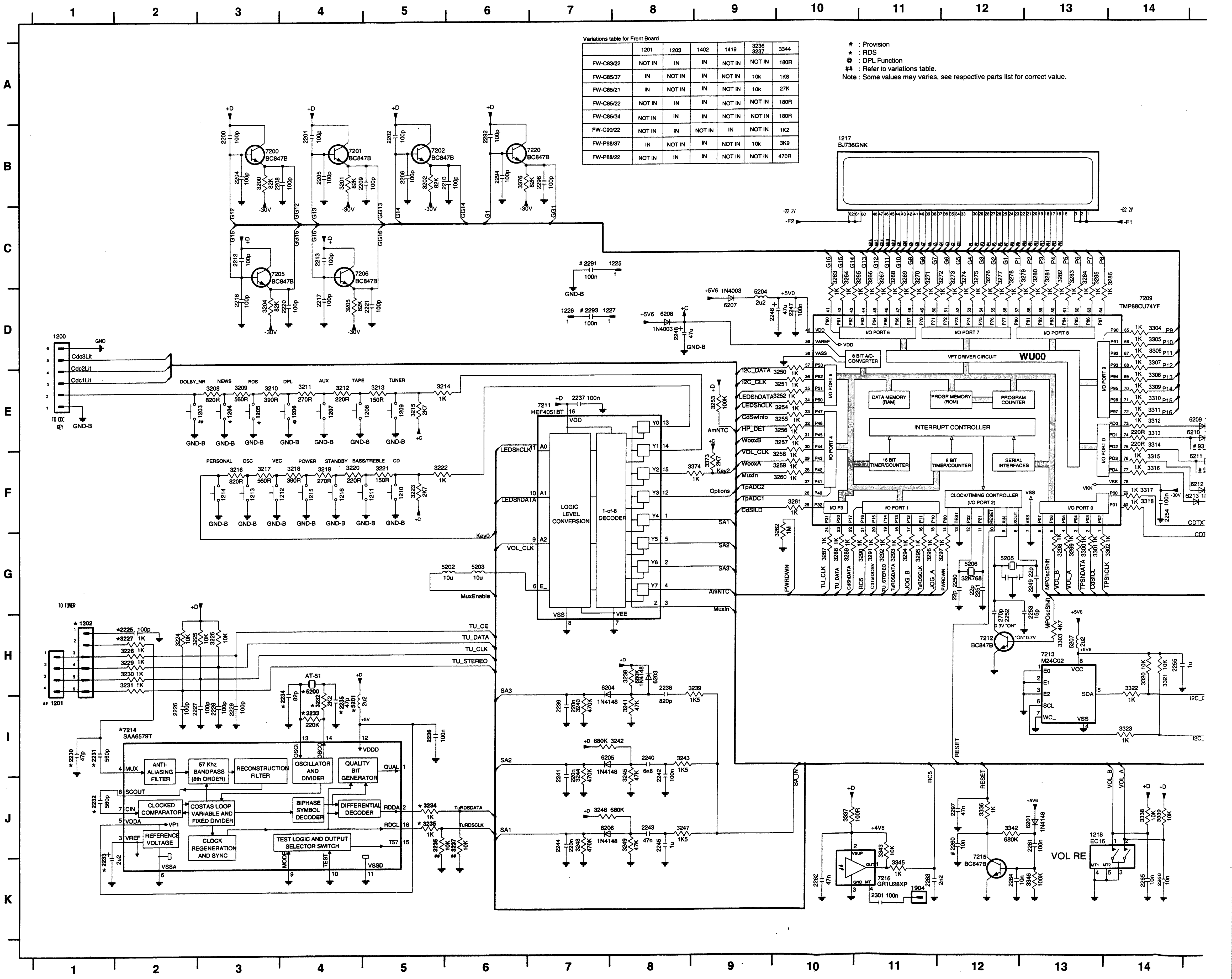
3316	
3317	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E
F
G
H
I
J
K
1217
BJ736GNK
7209
TMP88CU74YF
VFT DRIVER CIRCUIT
WU00
I/O PORT 6
I/O PORT 7
I/O PORT 8
I/O PORT 9
I/O PORT 5
I/O PORT 4
I/O PORT D
I/O PORT 3
I/O PORT 1
I/O PORT 0
8 BIT A/D-CONVERTER
DATA MEMORY (RAM)
PROGR MEMORY (ROM)
PROGRAM COUNTER
INTERRUPT CONTROLLER
16 BIT TIMER/COUNTER
8 BIT TIMER/COUNTER
SERIAL INTERFACES
CLOCK/TIMING CONTROLLER (I/O PORT 2)
7211
HEF4051BT
LOGIC LEVEL CONVERSION
1-of-8 DECODER
7214
SAA6579T
ANTI-ALIASING FILTER
57 Khz BANDPASS (8th ORDER)
RECONSTRUCTION FILTER
OSCILLATOR AND DIVIDER
QUALITY BIT GENERATOR
CLOCKED COMPARATOR
COSTAS LOOP VARIABLE AND FIXED DIVIDER
BIPHASE SYMBOL DECODER
DIFFERENTIAL DECODER
REFERENCE VOLTAGE
CLOCK REGENERATION AND SYNC
TEST LOGIC AND OUTPUT SELECTOR SWITCH
7213
M24C02
7216
GR1U28XP
7200 BC847B
7201 BC847B
7202 BC847B
7220 BC847B
7205 BC847B
7206 BC847B
7212 BC847B
7215 BC847B
1200
1202
1201
TO CDC KEY
TO TUNER
DOLBY_NR
NEWS
RDS
DPL
AUX
TAPE
TUNER
PERSONAL
DSC
VEC
POWER
STANDBY
BASS/TREBLE
CD
TU_CE
TU_DATA
TU_CLK
TU_STEREO
SA1
SA2
SA3
AmNTC
MuxIn
MuxEnable
VOL_CLK
Key0
LEDShCLK
LEDShDATA
I2C_DATA
I2C_CLK
PWRDWN
RESET
VOL_B
VOL_A
VOL RE
1218
EC16
AT-51
-22 2V
-F2
-F1
GND-B
+D
-30V

Variations table for Front Board

	1201	1203	1402	1419	3236 3237	3344
FW-C83/22	NOT IN	IN	IN	NOT IN	NOT IN	180R
FW-C85/37	IN	NOT IN	IN	NOT IN	10k	1K8
FW-C85/21	IN	NOT IN	IN	NOT IN	10k	27K
FW-C85/22	NOT IN	IN	IN	NOT IN	NOT IN	180R
FW-C85/34	NOT IN	IN	IN	NOT IN	NOT IN	180R
FW-C90/22	NOT IN	IN	NOT IN	IN	NOT IN	1K2
FW-P88/37	IN	NOT IN	IN	NOT IN	10k	3K9
FW-P88/22	NOT IN	IN	IN	NOT IN	NOT IN	470R

# : Provision
* : RDS
@ : DPL Function
## : Refer to variations table.
Note : Some values may varies, see respective parts list for correct value.

2228 I3
2229 I3
2230 I1
2231 I1
2232 J1
2233 K1
2234 I4

2235 I4
2236 I5
2237 E7
2238 H8
2239 I7
2240 I8
2241 J7

2242 J8
2243 J8
2244 J7
2245 J8
2246 D9
2247 D10
2248 D8

2249 G13
2250 G12
2251 G12
2252 H12
2253 H13
2254 F14
2255 H14

2256 A17
2257 B15
2258 D17
2259 D15
2260 J12
2261 J13
2262 K10

2263 K11
2264 K12
2265 K14
2266 K14
2267 K15
2268 K16
2269 D19

2270 D20
2271 D20
2272 D20
2273 F20
2274 F20
2275 G20
2276 G19

2277 H19
2278 H20
2279 J17
2280 J19
2281 K17
2282 K17
2283 K19

2284 K20
2285 K20
2286 A17
2287 D17
2288 H15
2289 G17
2290 G17

2291 C7
2292 B6
2293 D7
2294 B6
2296 B7
2297 J12
2298 G20

2299 G20
2300 G20
2301 K11
2302 E16
3200 B3
3201 B4
3202 B5

3204 D3
3205 D4
3208 E3
3209 E3
3210 E3
3211 E4
3212 E4

3213 E5
3214 E5
3215 E5
3216 F3
3217 F3
3218 F4
3219 F4

3220 F4
3221 F5
3222 F5
3223 F5
3224 H2
3225 H2
3226 H3

3227 H2
3228 H2
3229 H2
3230 H2
3231 H2
3232 I4
3233 I4

3234 J5
3235 J5
3236 J5
3237 J6
3238 H8
3239 H9
3240 I7

3241 I8
3242 I8
3243 I8
3244 J7
3245 J8
3246 J7
3247 J8

3248 J7
3249 J8
3250 E10
3251 E10
3252 E10
3253 E9
3254 E10

3255 E10
3256 E10
3257 E10
3258 F10
3259 F10
3260 F10
3261 F10

3262 G10
3263 C10
3264 C10
3265 C11
3266 C11
3267 C11
3268 C11

3269 C11
3270 C11
3271 C11
3272 C12
3273 C12
3274 C12
3275 C12

3276 C12
3277 C12
3278 C12
3279 C13
3280 C13
3281 C13
3282 C13

3283 C13
3284 C13
3285 C13
3286 C14
3287 G10
3288 G10
3289 G10

3290 G11
3291 G11
3292 G11
3293 G11
3294 G11
3295 G11
3296 G11

3297 G11
3298 G13
3299 G13
3300 G13
3301 G13
3302 G14
3303 H13

3304 D14
3305 D14
3306 D14
3307 D14
3308 E14
3309 E14
3310 E14

3311 E14
3312 E14
3313 E14
3314 E14
3315 F14
3316 F14
3317 F14

3318 F14
3320 H14
3321 H14
3322 H14
3323 I14
3324 B17
3325 C17

3326 C17
3327 C17
3328 C17
3329 D15
3330 E17
3331 H17
3332 H17

3333 H17
3334 H17
3335 J16
3336 J12
3337 J10
3338 J14
3339 J14

3340 J15
3341 J16
3342 J12
3343 J11
3344 J16
3345 K11
3346 K13

3347 C20
3348 C20
3351 C20
3352 E20
3353 E20
3354 E20
3355 F20

3356 F20
3357 G19
3358 G19
3359 G19
3360 G20
3361 G20
3362 H20

3363 H20
3364 I20
3367 G19
3368 G19
3369 G19
3370 H19
3371 E17

3372 F18
3373 F9
3374 F9
3376 B6
3377 E15
3378 D20
5200 H4

5201 I4
5202 G6
5203 G6
5204 D9
5205 G12
5206 G12
5207 H13

5208 G15
5209 E20
6201 J13
6203 H8
6204 H7
6205 I7
6206 J7

6207 D9
6208 D8
6209 E15
6210 E15
6211 F15
6212 F15
6213 F15

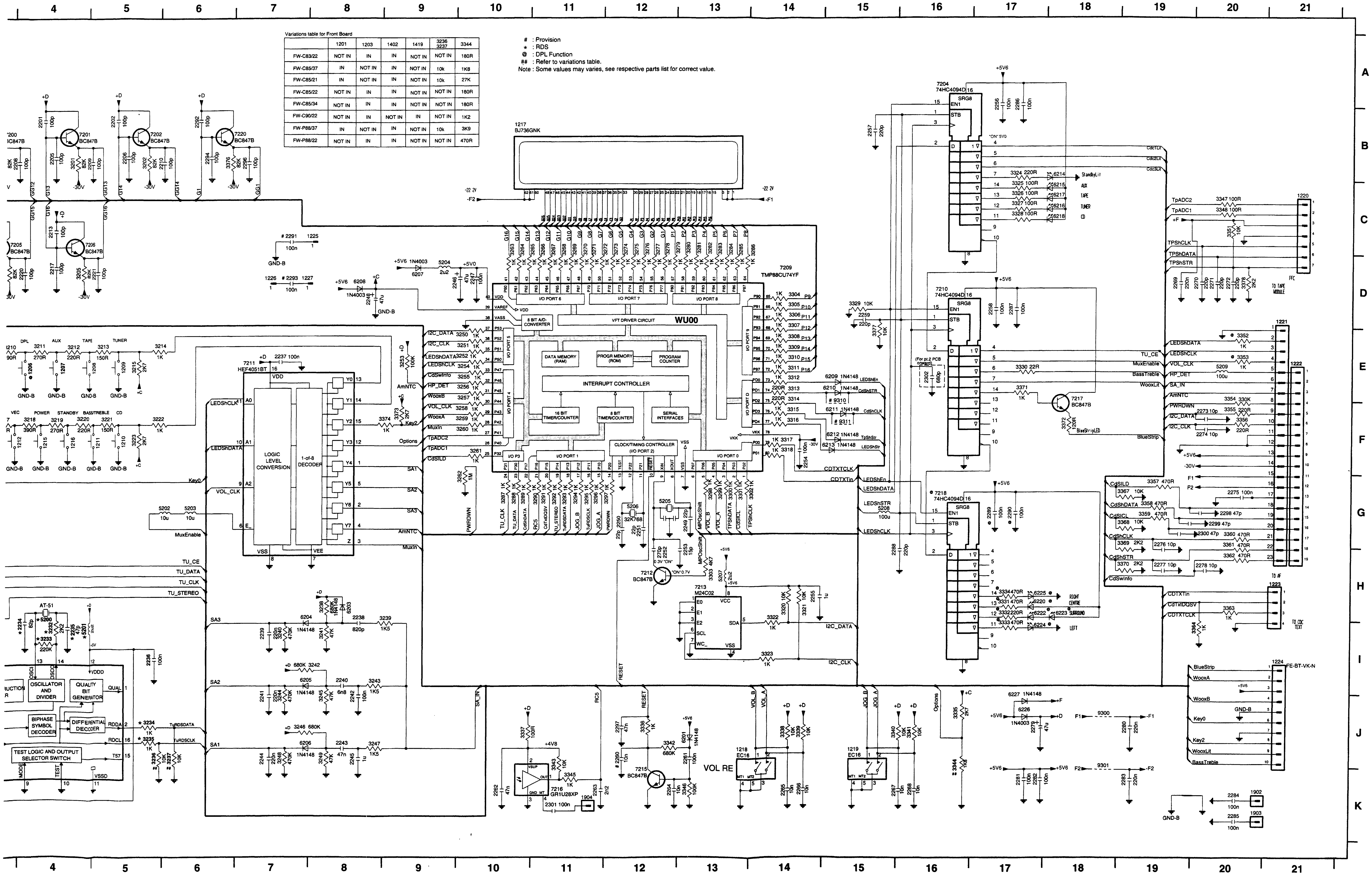
6214 B18
6215 C18
6216 C18
6217 C18
6218 C18
6220 H17
6222 H17

6223 H18
6224 I17
6225 H17
6226 J17
6227 I17
7200 B3
7201 B4

7202 B5
7204 A16
7205 C3
7206 C4
7209 D14
7210 D16
7211 E7

7212 H12
7213 H13
7214 I2
7215 K12
7216 K11
7217 E18
7218 G16

7220 B6
9300 J18
9301 J18
9310 E15
9311 F15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D
E
F
G
H
I
J
K
7201
BC847B
7202
BC847B
7220
BC847B
7205
BC847B
7206
BC847B
+D
-30V
G1
GG1
G12
GG12
G13
GG13
G14
GG14
G15
GG15
G16
GG16
1217
BJ736GNK
-22 2V
-F2
-F1
# 2291
100n
1225
GND-B
1226
# 2293
1227
+5V6
6208
1N4003
+C
47u
GND-B
+5V6
1N4003
6207
5204
2u2
+5V0
7209
TMP88CU74YF
WU00
I/O PORT 6
I/O PORT 7
I/O PORT 8
VFT DRIVER CIRCUIT
8 BIT A/D-CONVERTER
DATA MEMORY (RAM)
PROGR MEMORY (ROM)
PROGRAM COUNTER
INTERRUPT CONTROLLER
16 BIT TIMER/COUNTER
8 BIT TIMER/COUNTER
SERIAL INTERFACES
CLOCK/TIMING CONTROLLER (I/O PORT 2)
I/O P3
I/O PORT 1
I/O PORT 0
I/O PORT 5
I/O PORT 4
I/O PORT 9
I/O PORT D
VDD
VAREF
VASS
VSS
VKK
DPL
AUX
TAPE
TUNER
1206
1207
1208
1209
VEC
POWER
STANDBY
BASS/TREBLE
CD
1212
1215
1216
1211
1210
GND-B
7211
HEF4051BT
LOGIC LEVEL CONVERSION
1-of-8 DECODER
2237 100n
LEDShCLK
LEDShDATA
Key0
VOL_CLK
MuxEnable
5202
10u
5203
10u
I2C_DATA
I2C_CLK
LEDShDATA
LEDShCLK
CdSwInfo
HP_DET
WooxB
VOL_CLK
WooxA
MuxIn
TpADC2
TpADC1
CdSILD
AmNTC
Key2
Options
SA1
SA2
SA3
AmNTC
MuxIn
PWRDWN
TU_CLK
TU_DATA
CdShDATA
RC5
CdTxtDQSV
TU_STEREO
TuRDSDATA
JOG_B
TuRDSCLK
JOG_A
PWRDWN
MPOscShift
VOL_B
VOL_A
TPShDATA
CdSCL
TPShCLK
5206
32K768
5205
7212
BC847B
"ON" 0.7V
7213
M24C02
I2C_DATA
I2C_CLK
RESET
TU_CE
TU_DATA
TU_CLK
TU_STEREO
AT-51
5200
OSCILLATOR AND DIVIDER
QUALITY BIT GENERATOR
BIPHASE SYMBOL DECODER
DIFFERENTIAL DECODER
TEST LOGIC AND OUTPUT SELECTOR SWITCH
QUAL
RDDA
RDCL
VDDD
VSSD
MODE
TEST
7216
GR1U28XP
2301 100n
1904
7215
BC847B
VOL RE
1218
EC16
1219
EC16
JOG_B
JOG_A
7204
74HC4094D
SRG8
7210
74HC4094D
SRG8
7218
74HC4094D
SRG8
EN1
STB
6214
StandbyLit
6215
AUX
6216
TAPE
6217
TUNER
6218
CD
CdcILit
CdcIILit
CdcIIILit
7217
BC847B
BlueStripLED
LEDShEn
LEDShDATA
LEDShSTR
LEDShCLK
CDTXTCLK
CDTXTin
6225
RIGHT
6220
CENTRE
6222
6223
SURROUND
6224
LEFT
1220
TpADC2
TpADC1
+F
TPShCLK
TPShDATA
TPShSTR
TO TAPE MODULE
FFC
1221
1222
TU_CE
MuxEnable
BassTreble
WooxLit
LEDShDATA
LEDShCLK
VOL_CLK
HP_DET
SA_IN
AmNTC
PWRDWN
I2C_DATA
I2C_CLK
BlueStrip
+5V6
-30V
F1
F2
CdSILD
CdShDATA
CdSICL
CdShCLK
CdShSTR
CdSwInfo
1223
TO AF
CDTXTin
CdTxtDQSV
CDTXTCLK
TO CDC TEXT
1224
FE-BT-VK-N
BlueStrip
WooxA
WooxB
Key0
GND-B
Key2
WooxLit
BassTreble
6227
1N4148
6226
1N4003
9300
9301
1902
1903
2284
2285
GND-B

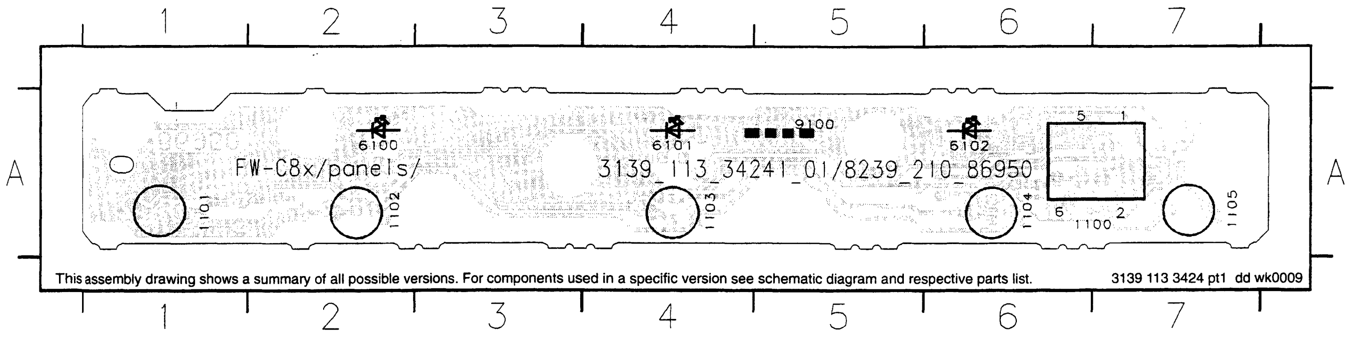
Variations table for Front Board

	1201	1203	1402	1419	3236 3237	3344
FW-C83/22	NOT IN	IN	IN	NOT IN	NOT IN	180R
FW-C85/37	IN	NOT IN	IN	NOT IN	10k	1K8
FW-C85/21	IN	NOT IN	IN	NOT IN	10k	27K
FW-C85/22	NOT IN	IN	IN	NOT IN	NOT IN	180R
FW-C85/34	NOT IN	IN	IN	NOT IN	NOT IN	180R
FW-C90/22	NOT IN	IN	NOT IN	IN	NOT IN	1K2
FW-P88/37	IN	NOT IN	IN	NOT IN	10k	3K9
FW-P88/22	NOT IN	IN	IN	NOT IN	NOT IN	470R

# : Provision
* : RDS
@ : DPL Function
## : Refer to variations table.
Note : Some values may varies, see respective parts list for correct value.

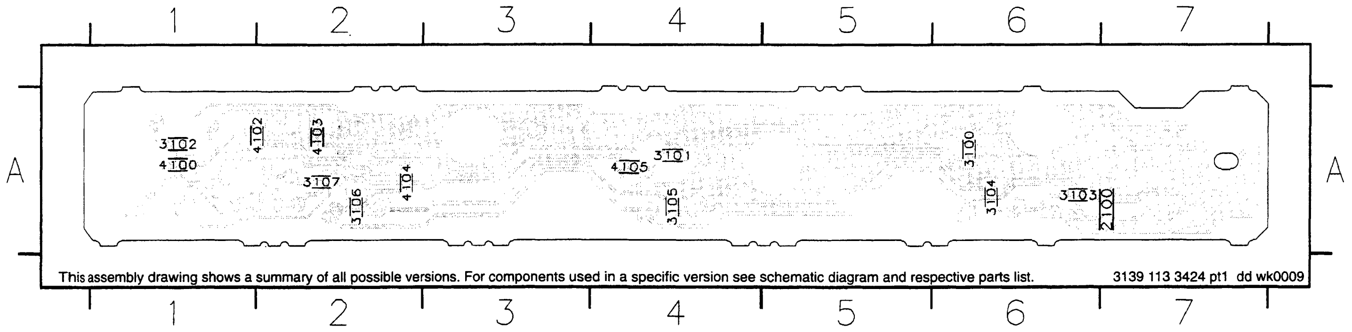
KEY-CDC BOARD - COMPONENT LAYOUT

1100 A6	1101 A1	1102 A2	1103 A4	1104 A6	1105 A7	6100 A2	6101 A4	6102 A6	9100 A5


1
2
3
4
5
6
7
A
6100
6101
6102
9100
FW-C8x/panels/
3139_113_34241_01/8239_210_86950
1101
1102
1103
1104
1105
1100
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
3139 113 3424 pt1 dd wk0009

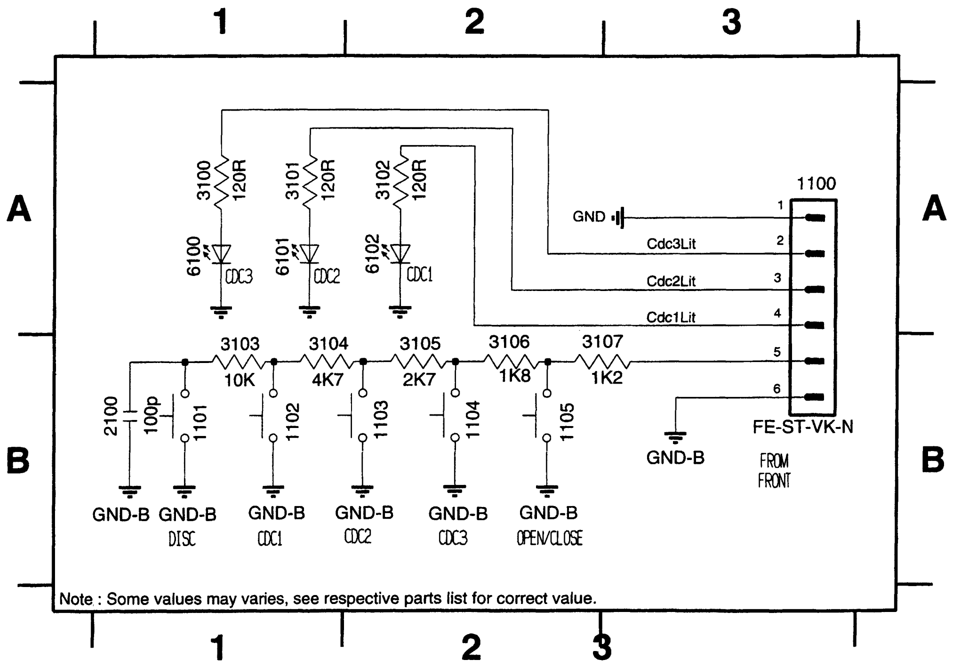
KEY-CDC BOARD - CHIP LAYOUT

2100 A7	3101 A4	3103 A6	3105 A4	3107 A2	4102 A2	4104 A2
3100 A6	3102 A1	3104 A6	3106 A2	4100 A1	4103 A2	4105 A4


1
2
3
4
5
6
7
A
3102
4100
4102
4103
3107
3106
4104
4105
3101
3105
3100
3104
3103
2100
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
3139 113 3424 pt1 dd wk0009

KEY-CDC PART - CIRCUIT DIAGRAM

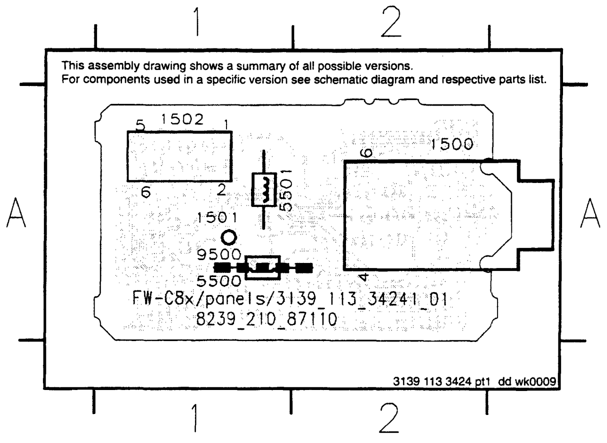
1100 A3	1102 B1	1104 B2	2100 B1	3101 A1	3103 B1	3105 B2	3107 B3	6101 A1
1101 B1	1103 B2	1105 B2	3100 A1	3102 A2	3104 B1	3106 B2	6100 A1	6102 A2


1
2
3
A
B
3100 120R
3101 120R
3102 120R
6100 CDC3
6101 CDC2
6102 CDC1
1100
GND
Cdc3Lit
Cdc2Lit
Cdc1Lit
FE-ST-VK-N
FROM FRONT
3103 10K
3104 4K7
3105 2K7
3106 1K8
3107 1K2
2100 100p
1101
1102
1103
1104
1105
GND-B
GND-B DISC
GND-B CDC1
GND-B CDC2
GND-B CDC3
GND-B OPEN/CLOSE

Note : Some values may varies, see respective parts list for correct value.

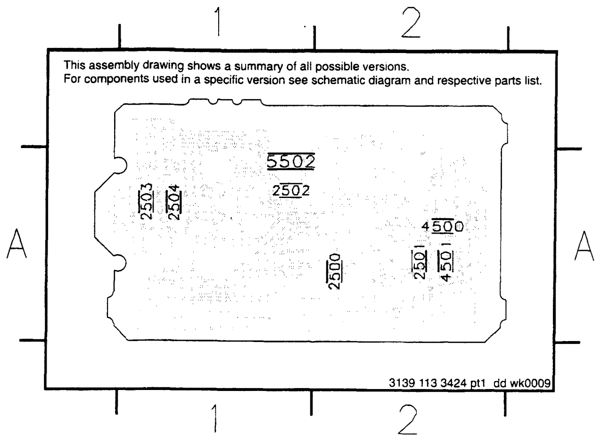
HEADPHONE BOARD - COMPONENT LAYOUT

1500 A2	1502 A1	5501 A1
1501 A1	5500 A1	9500 A1


1
2
A
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
1502
1500
1501
5501
9500
5500
FW-C8x/panels/3139_113_34241_01
8239_210_87110
3139 113 3424 pt1 dd wk0009

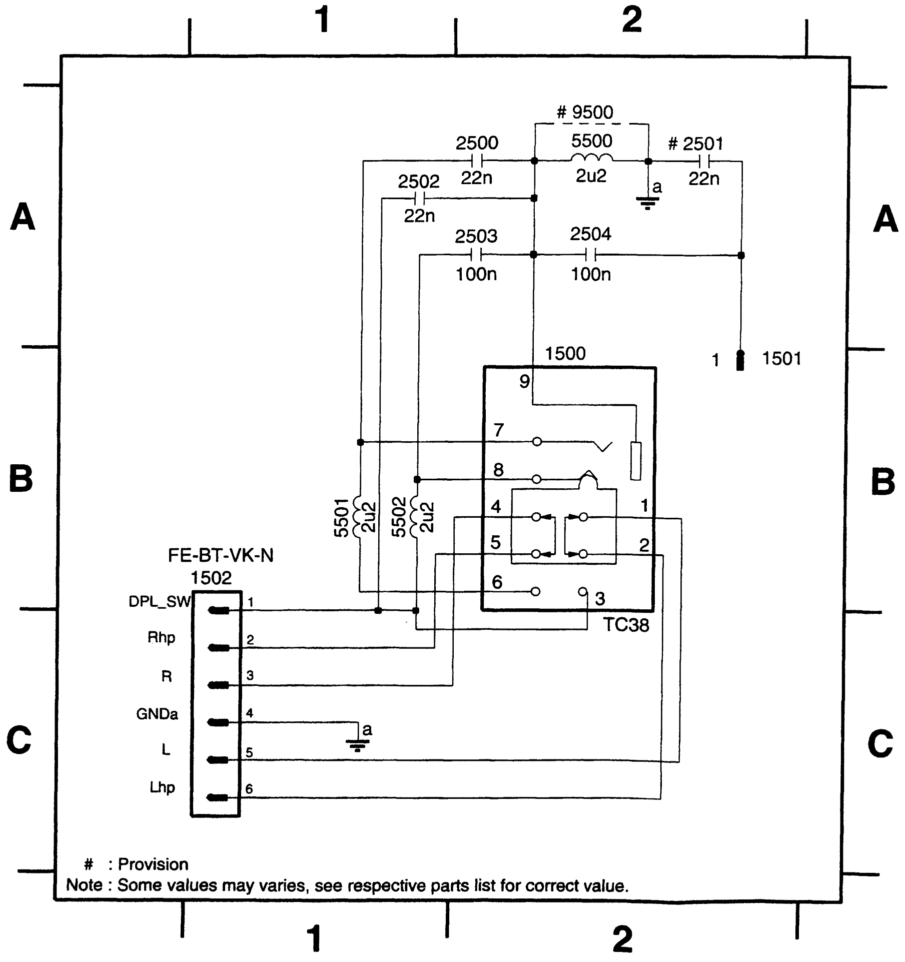
HEADPHONE BOARD - CHIP LAYOUT

2500 A2	2502 A1	2504 A1	4501 A2
2501 A2	2503 A1	4500 A2	5502 A1


1
2
A
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
5502
2502
2503
2504
4500
2500
2501
4501
3139 113 3424 pt1 dd wk0009

HEADPHONE PART - CIRCUIT DIAGRAM

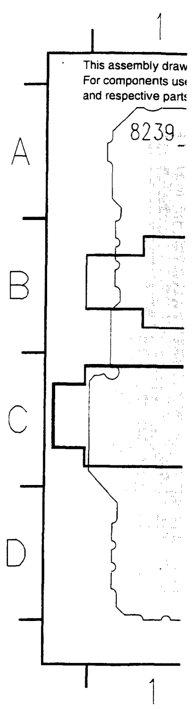
1500 B2	1502 B1	2501 A2	2503 A2	5500 A2	5502 B1
1501 B2	2500 A2	2502 A1	2504 A2	5501 B1	9500 A2


1
2
A
B
C
# 9500
2500 22n
5500 2u2
# 2501 22n
2502 22n
2503 100n
2504 100n
1501
1500
TC38
5501 2u2
5502 2u2
FE-BT-VK-N
1502
DPL_SW
Rhp
R
GNDa
L
Lhp

: Provision
Note : Some values may varies, see respective parts list for correct value.

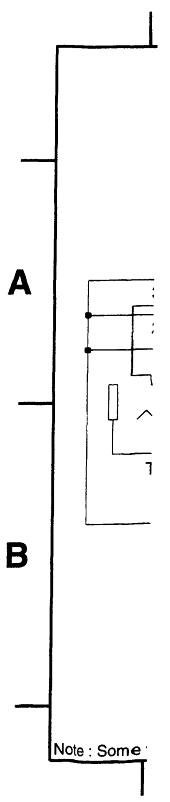
KARAOKE LAYOUT

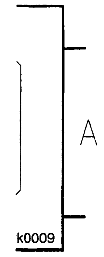
1600 C2
1601 D2
2602 A2

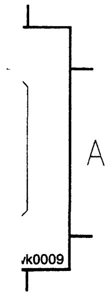


KARAOKE

1600 B1
1601 B4

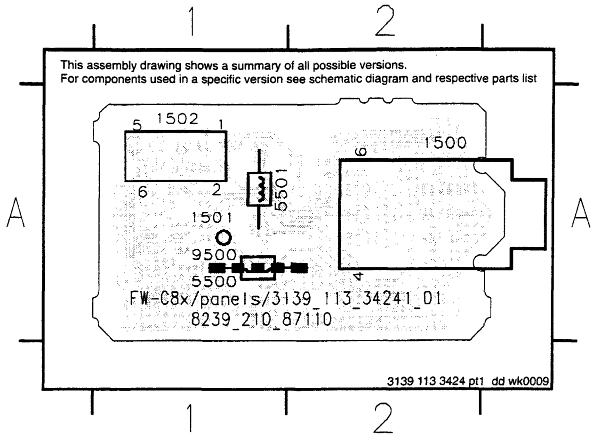






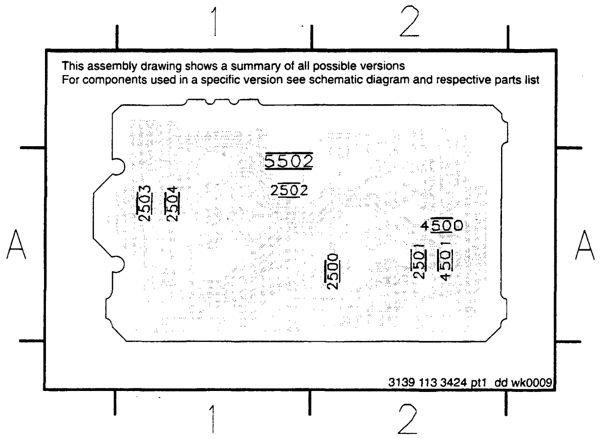
HEADPHONE BOARD - COMPONENT LAYOUT

1500	A2	1502	A1	5501	A1
1501	A1	5500	A1	9500	A1


1
2
A
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list
1502
5
1
6
2
5501
6
1500
1501
9500
5500
4
FW-C8x/panels/3139_113_34241_01
8239_210_87110
3139 113 3424 pt1 dd wk0009

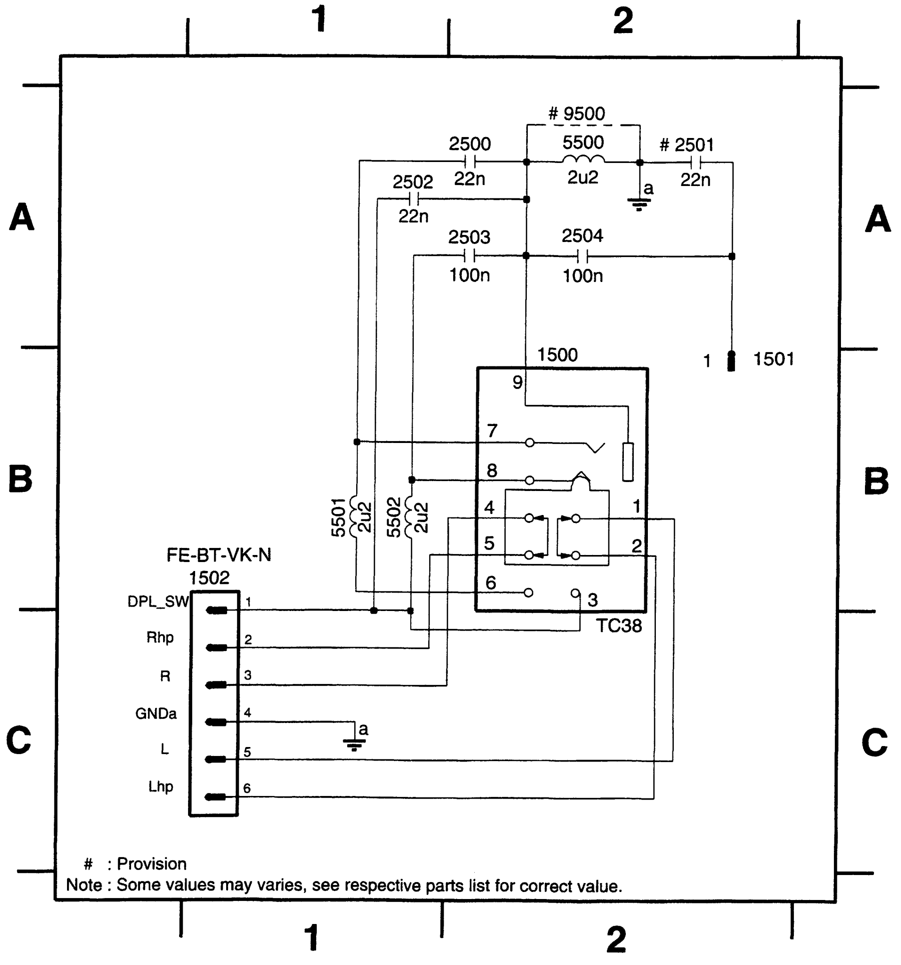
HEADPHONE BOARD - CHIP LAYOUT

2500	A2	2502	A1	2504	A1	4501	A2
2501	A2	2503	A1	4500	A2	5502	A1


1
2
A
This assembly drawing shows a summary of all possible versions
For components used in a specific version see schematic diagram and respective parts list
5502
2502
2503
2504
4500
2500
2501
4501
3139 113 3424 pt1 dd wk0009

HEADPHONE PART - CIRCUIT DIAGRAM

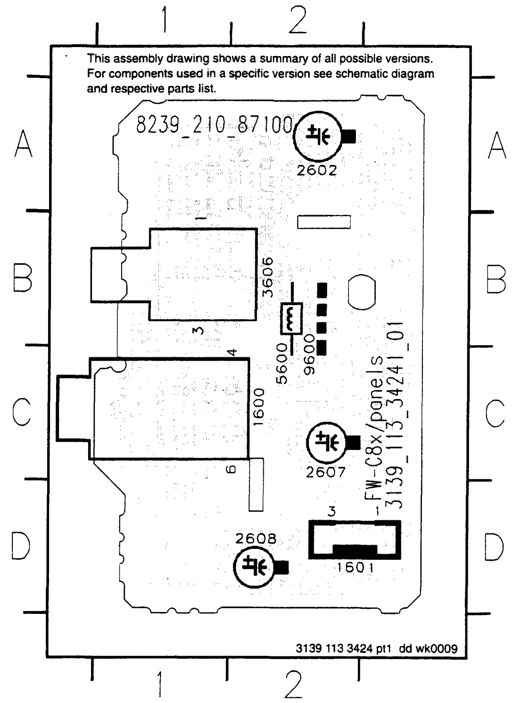
1500	B2	1502	B1	2501	A2	2503	A2	5500	A2	5502	B1
1501	B2	2500	A2	2502	A1	2504	A2	5501	B1	9500	A2


1
2
A
B
C
# 9500
2500
22n
5500
2u2
# 2501
22n
2502
22n
a
2503
100n
2504
100n
1500
1
1501
9
7
8
4
5
6
1
2
3
TC38
5501
2u2
5502
2u2
FE-BT-VK-N
1502
DPL_SW
Rhp
R
GNDa
L
Lhp
1
2
3
4
5
6
a

: Provision
Note : Some values may varies, see respective parts list for correct value.

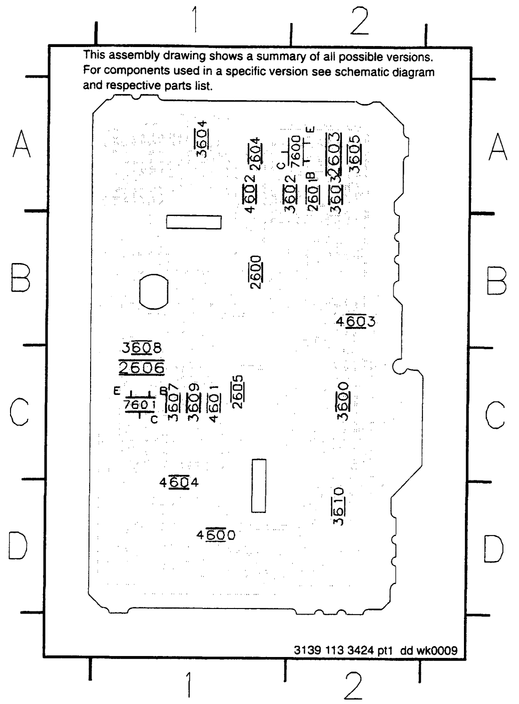
KARAOKE BOARD - COMPONENT LAYOUT

1600	C2	2607	C2	5600	C2
1601	D2	2608	D2	9600	C2
2602	A2	3606	B2		


1
2
A
B
C
D
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
8239_210_87100
2602
3606
3
4
5600
9600
1600
6
2607
FW-C8x/panels
3139_113_34241_01
3
2608
1601
3139 113 3424 pt1 dd wk0009

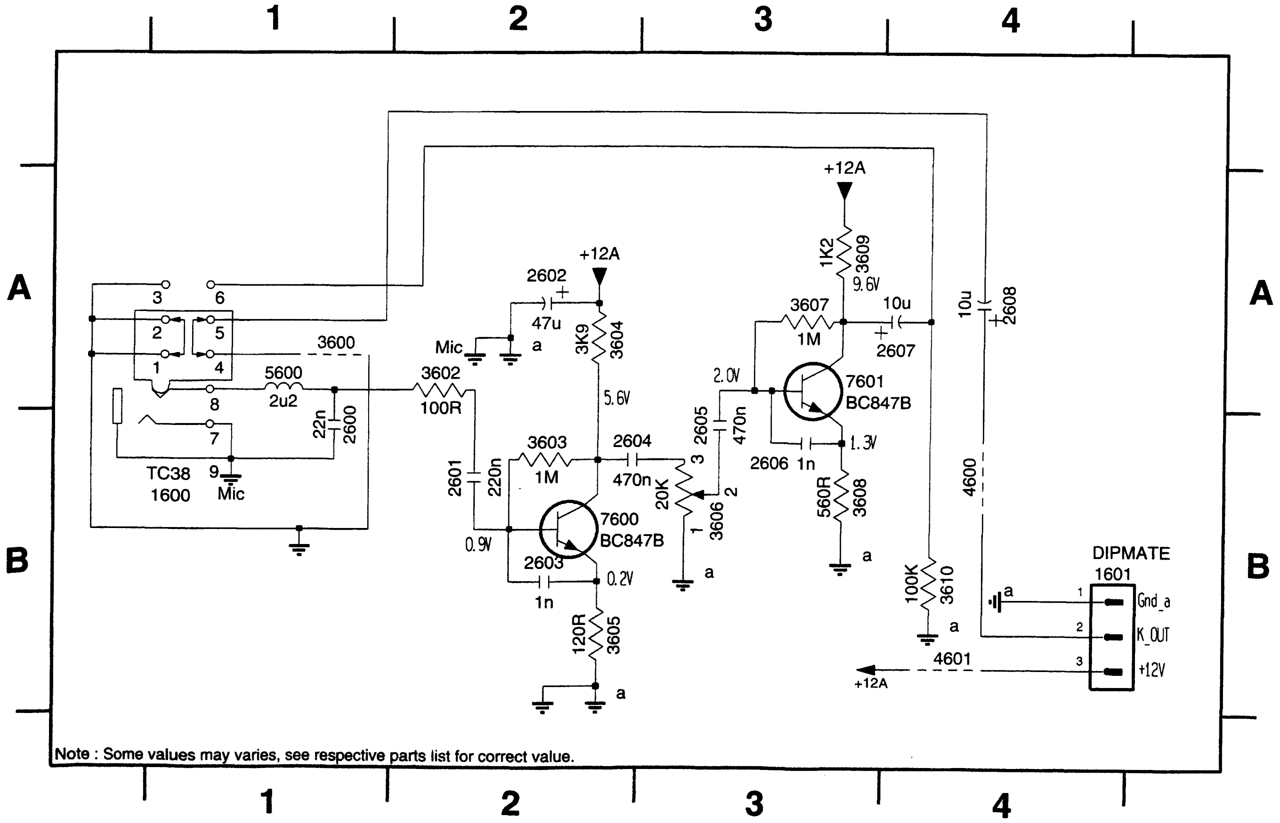
KARAOKE BOARD - CHIP LAYOUT

2600	B1	3603	A2	4601	C1
2601	A2	3604	A1	4602	A1
2603	A2	3605	A2	4603	B2
2604	A1	3607	C1	4604	D1
2605	C1	3608	C1	7600	A2
2606	C1	3609	C1	7601	C1
3600	C2	3610	D2		
3602	A1	4600	D1		


1
2
A
B
C
D
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
3604
4602
2604
3602
7600
2601
3603
3605
2600
4603
3608
2606
7601
3607
3609
4601
2605
3600
4604
4600
3610
3139 113 3424 pt1 dd wk0009

KARAOKE PART - CIRCUIT DIAGRAM

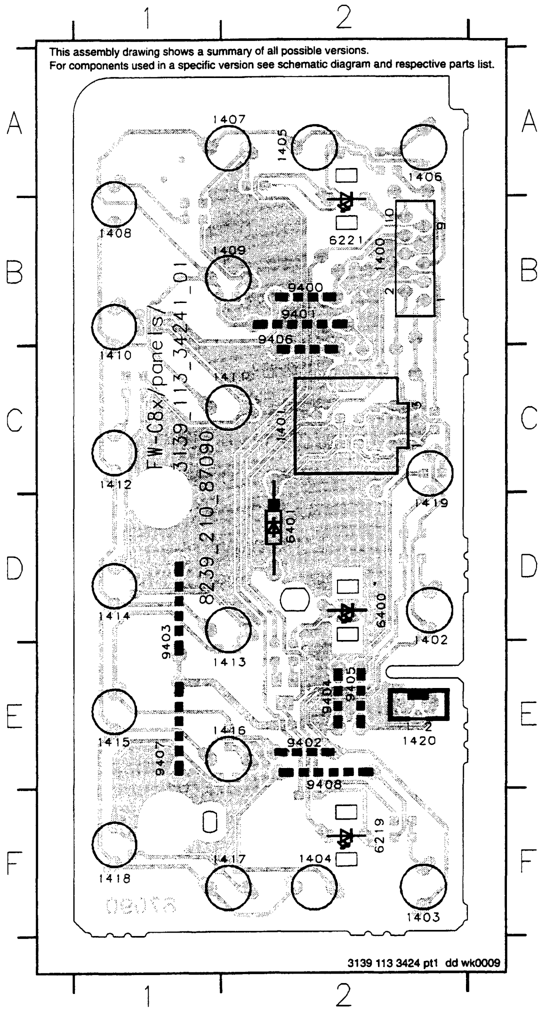
1600	B1	2600	B1	2602	A2	2604	B2	2606	B3	2608	A4	3602	A2	3604	A2	3606	B3	3608	B3	3610	B4	4601	B4	7600	B2
1601	B4	2601	B2	2603	B2	2605	B3	2607	A4	3600	A1	3603	B2	3605	B2	3607	A3	3609	A3	4600	B4	5600	A1	7601	A3


1
2
3
4
A
B
+12A
1K2
3609
9.6V
3607
1M
10u
2607
10u
2608
7601
BC847B
2.0V
1.3V
2606 1n
560R
3608
a
2602
47u
a
+12A
3K9
3604
5.6V
Mic
3600
5600
2u2
3602
100R
22n
2600
3
6
2
5
1
4
8
7
TC38
1600
9
Mic
3603
1M
2604
470n
2605
470n
20K
3606
1
2
3
2601
220n
7600
BC847B
0.9V
2603
1n
0.2V
120R
3605
a
a
a
4600
100K
3610
a
4601
+12A
DIPMATE
1601
a
1
2
3
Gnd_a
K_OUT
+12V

Note : Some values may varies, see respective parts list for correct value.

CONTROL BOARD - COMPONENT LAYOUT

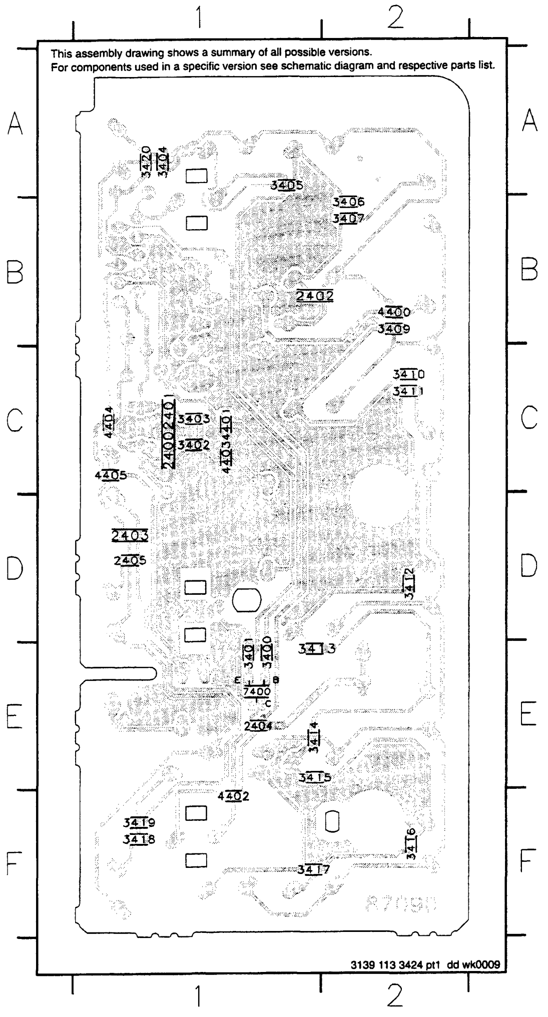
1400 B2	1407 A2	1414 D1	6219 F2	9403 E1
1401 C2	1408 B1	1415 E1	6221 B2	9404 E2
1402 D2	1409 B2	1416 E2	6400 D2	9405 E2
1403 F2	1410 C1	1417 F2	6401 D2	9406 B2
1404 F2	1411 C2	1418 F1	9400 B2	9407 E1
1405 A2	1412 C1	1419 D2	9401 B2	9408 E2
1406 A2	1413 E2	1420 E2	9402 E2	


This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.

1
2
A
B
C
D
E
F
1407
1405
1406
1408
1409
6221
1400
9400
9401
9406
1410
1401
1412
FW-C8x/panels/
3139_113_34241_01
8239_210_87090
6401
1419
1414
9403
1413
6400
1402
1415
1416
9407
9404
9405
9402
9408
1420
6219
1417
1404
1418
1403
3139 113 3424 pt1 dd wk0009

CONTROL BOARD - CHIP LAYOUT

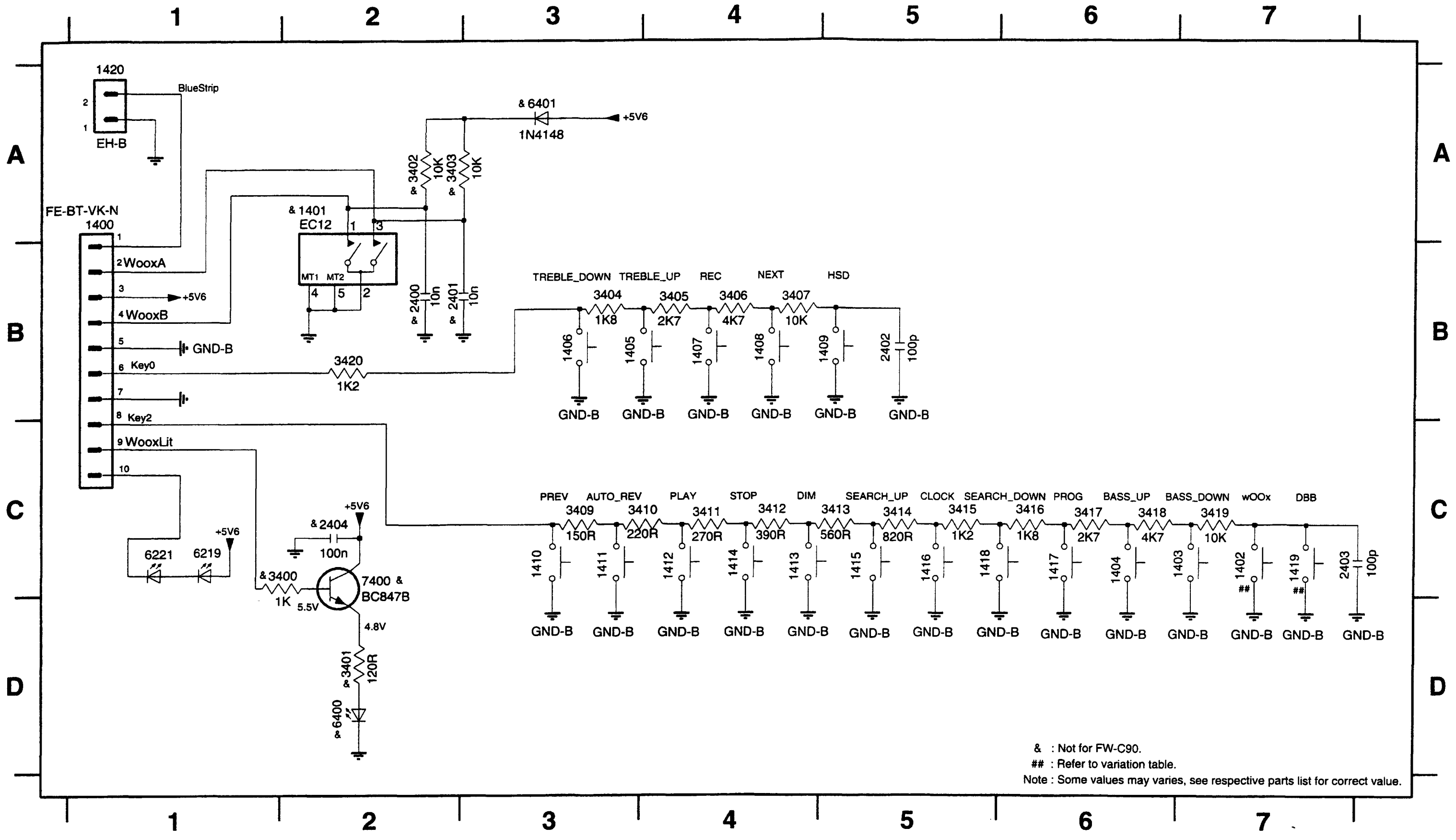
2400 C1	3401 E1	3409 B2	3416 F2	4402 F1
2401 C1	3402 C1	3410 C2	3417 F1	4403 C1
2402 B1	3403 C1	3411 C2	3418 F1	4404 C1
2403 D1	3404 A1	3412 D2	3419 F1	4405 C1
2404 E1	3405 A1	3413 E1	3420 A1	7400 E1
2405 D1	3406 B2	3414 E1	4400 B2	
3400 E1	3407 B2	3415 E1	4401 C1	


This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.

1
2
A
B
C
D
E
F
3420
3404
3405
3406
3407
2402
4400
3409
3410
3411
4404
2400
2401
3403
3402
4403
4401
4405
2403
2405
3412
3401
3400
7400
3413
2404
3414
4402
3415
3419
3418
3416
3417
3139 113 3424 pt1 dd wk0009

CONTROL PART - CIRCUIT DIAGRAM

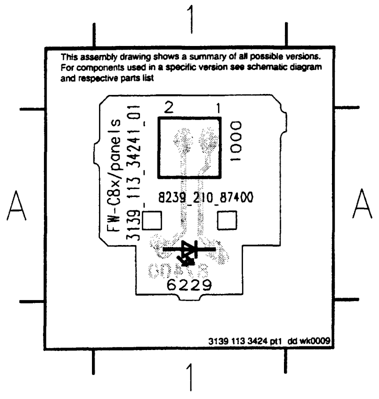
1400 A1	1403 C6	1406 B3	1409 B4	1412 C4	1415 C5	1418 C5	2400 B2	2403 C7	3401 D2	3404 B3	3407 B4	3411 C4	3414 C5	3417 C6	3420 B2	6400 D2
1401 A2	1404 C6	1407 B4	1410 C3	1413 C4	1416 C5	1419 C7	2401 B2	2404 C2	3402 A2	3405 B4	3409 C3	3412 C4	3415 C5	3418 C6	6219 C1	6401 A3
1402 C7	1405 B3	1408 B4	1411 C3	1414 C4	1417 C6	1420 A1	2402 B5	3400 C2	3403 A2	3406 B4	3410 C4	3413 C5	3416 C6	3419 C7	6221 C1	7400 C2


& : Not for FW-C90.
: Refer to variation table.
Note : Some values may varies, see respective parts list for correct value.

1
2
3
4
5
6
7
A
B
C
D
1420
BlueStrip
EH-B
FE-BT-VK-N
1400
1
2 WooxA
3
+5V6
4 WooxB
5
GND-B
6 Key0
7
8 Key2
9 WooxLit
10
& 1401
EC12
MT1
MT2
& 6401
1N4148
+5V6
& 3402
10K
& 3403
10K
& 2400
10n
& 2401
10n
3420
1K2
TREBLE_DOWN
TREBLE_UP
REC
NEXT
HSD
3404
1K8
3405
2K7
3406
4K7
3407
10K
1406
1405
1407
1408
1409
2402
100p
GND-B
PREV
AUTO_REV
PLAY
STOP
DIM
SEARCH_UP
CLOCK
SEARCH_DOWN
PROG
BASS_UP
BASS_DOWN
wOOx
DBB
3409
150R
3410
220R
3411
270R
3412
390R
3413
560R
3414
820R
3415
1K2
3416
1K8
3417
2K7
3418
4K7
3419
10K
1410
1411
1412
1414
1413
1415
1416
1418
1417
1404
1403
1402
1419
##
2403
100p
6221
6219
& 2404
100n
& 3400
1K
5.5V
7400 &
BC847B
4.8V
& 3401
120R
& 6400

BLUE STRIP LED BOARD - COMPONENT LAYOUT

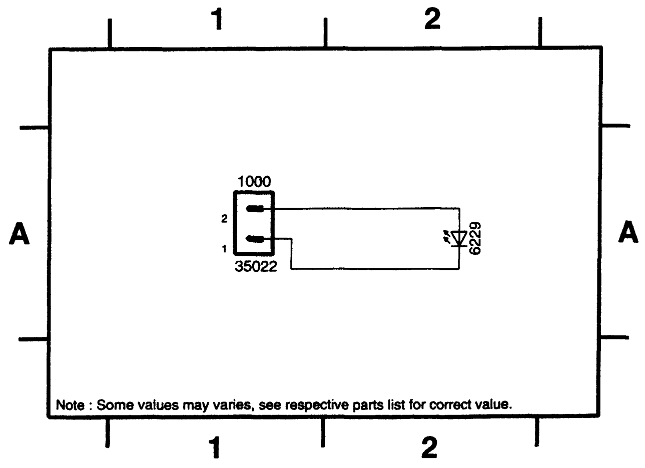
1000 A1	6229 A1


This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list

1
A
2
1
1000
FW-C8x/panels
3139_113_34241_01
8239_210_87400
6229
3139 113 3424 pt1 dd wk0009

BLUE STRIP LED PART - CIRCUIT DIAGRAM

1000 A1	6229 A2


Note : Some values may varies, see respective parts list for correct value.

1
2
A
1000
2
1
35022
6229

ELECTRICAL PARTS LIST - FRONT BOARD

MISCELLANEOUS

1100	482226511207	Flex Connector 6P
1101	482227613775	Tact Switch
1102	482227613775	Tact Switch
1103	482227613775	Tact Switch
1104	482227613775	Tact Switch
1105	482227613775	Tact Switch
1200	482226511207	Flex Connector 6P
1203	482227613775	Tact Switch
1204	482227613775	Tact Switch
1205	482227613775	Tact Switch
1206	482227613775	Tact Switch
1207	482227613775	Tact Switch
1208	482227613775	Tact Switch
1209	482227613775	Tact Switch
1210	482227613775	Tact Switch
1211	482227613775	Tact Switch
1212	482227613775	Tact Switch
1213	482227613775	Tact Switch
1214	482227613775	Tact Switch
1215	482227613775	Tact Switch
1216	482227613775	Tact Switch
1217	313911052250	FTD Display
1218	482227310365	Rotary Encoder 24P
1219	242212916385	Rotary Encoder 12P
1220	482226710953	Flex Connector 7P
1221	482226511182	Flex Connector 23P
1222	482226511545	Flex Connector 19P
1223	482226710733	Flex Connector 4P
1224	482226710729	Flex Connector 10P
1400	482226710729	Flex Connector 10P
1401	242212916386	Rotary Encoder 12P
1402	482227613775	Tact Switch
1403	482227613775	Tact Switch
1404	482227613775	Tact Switch
1405	482227613775	Tact Switch
1406	482227613775	Tact Switch
1407	482227613775	Tact Switch
1408	482227613775	Tact Switch
1409	482227613775	Tact Switch
1410	482227613775	Tact Switch
1411	482227613775	Tact Switch
1412	482227613775	Tact Switch
1413	482227613775	Tact Switch
1414	482227613775	Tact Switch
1415	482227613775	Tact Switch
1416	482227613775	Tact Switch
1417	482227613775	Tact Switch
1418	482227613775	Tact Switch
1500	482226511529	Headphone Socket
1502	482226710731	Flex Connector 6P

CAPACITORS

2100	532212232531	100pF 5% 50V
2200	532212232531	100pF 5% 50V
2201	532212232531	100pF 5% 50V
2202	532212232531	100pF 5% 50V
2204	532212232531	100pF 5% 50V
2205	532212232531	100pF 5% 50V
2206	532212232531	100pF 5% 50V
2208	532212232531	100pF 5% 50V
2209	532212232531	100pF 5% 50V
2210	532212232531	100pF 5% 50V
2212	532212232531	100pF 5% 50V
2213	532212232531	100pF 5% 50V
2216	532212232531	100pF 5% 50V
2217	532212232531	100pF 5% 50V
2220	532212232531	100pF 5% 50V
2221	532212232531	100pF 5% 50V
2225	532212232531	100pF 5% 50V
2226	532212232531	100pF 5% 50V
2227	532212232531	100pF 5% 50V
2228	532212232531	100pF 5% 50V
2229	532212232531	100pF 5% 50V
2230	482212613692	47pF 1% 63V
2231	482212233173	560pF 10% 50V
2232	482212233173	560pF 10% 50V
2233	482212422652	2,2µF 20% 50V
2234	482212613695	82pF 1% 63V
2235	482212613692	47pF 1% 63V
2236	482212614585	100nF 10% 50V
2237	482212614585	100nF 10% 50V
2238	482212233806	820pF 10% 63V
2239	482212614076	220nF +80/-20% 25V
2240	532212231866	6,8nF 10% 63V
2241	482212614076	220nF +80/-20% 25V
2242	482212614585	100nF 10% 50V
2243	482212613751	47nF 10% 63V
2244	482212614076	220nF +80/-20% 25V
2245	482212614043	1µF +80/-20% 16V
2246	482212481286	47µF 20% 16V
2247	482212614585	100nF 10% 50V
2248	482212481286	47µF 20% 16V
2249	532212232658	22pF 5% 50V
2250	532212232658	22pF 5% 50V
2251	532212232658	22pF 5% 50V
2252	482212233216	270pF 5% 50V
2253	482212613486	15pF 2% 63V
2254	482212613838	100nF +80/-20% 50V
2255	482212614043	1µF +80/-20% 16V
2256	482212614585	100nF 10% 50V
2257	482212233575	220pF 5% 63V
2258	482212614585	100nF 10% 50V

ELECTRICAL PARTS LIST - FRONT BOARD

2259	482212233575	220pF 5% 63V
2261	482212614585	100nF 10% 50V
2262	482212613751	47nF 10% 63V
2263	482212233127	2,2nF 10% 63V
2264	482212233177	10nF 20% 50V
2265	482212233177	10nF 20% 50V
2266	482212233177	10nF 20% 50V
2267	482212233177	10nF 20% 50V
2268	482212233177	10nF 20% 50V
2269	482212614076	220nF +80/-20% 25V
2270	482212233575	220pF 5% 63V
2271	482212233575	220pF 5% 63V
2272	482212233575	220pF 5% 63V
2273	532212232448	10pF 5% 63V
2274	532212232448	10pF 5% 63V
2275	482212614585	100nF 10% 50V
2276	532212232448	10pF 5% 63V
2277	532212232448	10pF 5% 63V
2278	532212232448	10pF 5% 63V
2279	482212481286	47µF 20% 16V
2280	482212613473	220nF +80/-20% 50V
2281	482212614585	100nF 10% 50V
2282	482212614585	100nF 10% 50V
2283	482212613473	220nF +80/-20% 50V
2284	482212614585	100nF 10% 50V
2285	482212614585	100nF 10% 50V
2286	482212614585	100nF 10% 50V
2287	482212614585	100nF 10% 50V
2288	482212233575	220pF 5% 63V
2289	482212614585	100nF 10% 50V
2290	482212614585	100nF 10% 50V
2292	532212232531	100pF 5% 50V
2294	532212232531	100pF 5% 50V
2296	532212232531	100pF 5% 50V
2297	482212613751	47nF 10% 63V
2298	482212613692	47pF 1% 63V
2299	482212613692	47pF 1% 63V
2300	482212613692	47pF 1% 63V
2301	482212612882	100nF +80/-20% 50V
2400	482212233177	10nF 20% 50V
2401	482212233177	10nF 20% 50V
2402	532212232531	100pF 5% 50V
2403	532212232531	100pF 5% 50V
2404	482212613838	100nF +80/-20% 50V
2405	482205120008	0R Jumper 0805
2500	532212232654	22nF 10% 63V
2502	532212232654	22nF 10% 63V
2503	482212614585	100nF 10% 50V
2504	482212613838	100nF +80/-20% 50V

RESISTORS

3100	482205120121	120R 5% 0,1W
3101	482205120121	120R 5% 0,1W
3102	482205120121	120R 5% 0,1W
3103	482211710833	10k 1% 0,1W
3104	482205120472	4k7 5% 0,1W
3105	482211712955	2k7 1% 0,1W
3106	482205120182	1k8 5% 0,1W
3107	482205120122	1k2 5% 0,1W
3200	482211711149	82k 1% 0,1W
3201	482211711149	82k 1% 0,1W
3202	482211711149	82k 1% 0,1W
3204	482211711149	82k 1% 0,1W
3205	482211711149	82k 1% 0,1W
3208	482211711454	820R 1% 0,1W
3209	482205120561	560R 5% 0,1W
3210	482205120391	390R 5% 0,1W
3211	482211711504	270R 1% 0,1W
3212	482211711503	220R 1% 0,1W
3213	482211710353	150R 1% 0,1W
3214	482205011002	1k 1% 0,4W
3215	482211652263	2k7 5% 0,5W
3216	482211711454	820R 1% 0,1W
3217	482205120561	560R 5% 0,1W
3218	482205120391	390R 5% 0,1W
3219	482211711504	270R 1% 0,1W
3220	482211711503	220R 1% 0,1W
3221	482211683868	150R 5% 0,5W
3222	482205011002	1k 1% 0,4W
3223	482211712955	2k7 1% 0,1W
3224	482211710833	10k 1% 0,1W
3225	482211710833	10k 1% 0,1W
3226	482211710833	10k 1% 0,1W
3227	482205110102	1k 2% 0,25W
3228	482205110102	1k 2% 0,25W
3229	482205110102	1k 2% 0,25W
3230	482205110102	1k 2% 0,25W
3231	482205110102	1k 2% 0,25W
3232	482211711449	2k2 1% 0,1W
3233	482211713579	220k 1% 0,1W
3234	482205110102	1k 2% 0,25W
3235	482205110102	1k 2% 0,25W
3236	482211710833	10k 1% 0,1W
3237	482211710833	10k 1% 0,1W
3238	482205120684	680k 5% 0,1W
3239	482211711139	1k5 1% 0,1W
3240	482205120474	470k 5% 0,1W
3241	482211710834	47k 1% 0,1W
3242	482205120684	680k 5% 0,1W
3243	482211711139	1k5 1% 0,1W
3244	482205120474	470k 5% 0,1W

RESISTORS

3245	482211710834	47k 1% 0,1W	
3246	482205120684	680k 5% 0,1W	
3247	482211711139	1k5 1% 0,1W	
3248	482205120474	470k 5% 0,1W	
3249	482211710834	47k 1% 0,1W	
3250	482205110102	1k 2% 0,25W	
3251	482205110102	1k 2% 0,25W	
3252	482205110102	1k 2% 0,25W	
3253	482211652234	100k 5% 0,5W	
3254	482205110102	1k 2% 0,25W	
3255	482205110102	1k 2% 0,25W	
3256	482205110102	1k 2% 0,25W	
3257	482205110102	1k 2% 0,25W	
3258	482205110102	1k 2% 0,25W	
3259	482205110102	1k 2% 0,25W	
3260	482205110102	1k 2% 0,25W	
3261	482205110102	1k 2% 0,25W	
3262	482205120105	1M 5% 0,1W	
3263	482205110102	1k 2% 0,25W	
3264	482205110102	1k 2% 0,25W	
3265	482205110102	1k 2% 0,25W	
3266	482205110102	1k 2% 0,25W	
3267	482205110102	1k 2% 0,25W	
3268	482205110102	1k 2% 0,25W	
3269	482205110102	1k 2% 0,25W	
3270	482205110102	1k 2% 0,25W	
3271	482205110102	1k 2% 0,25W	
3272	482205110102	1k 2% 0,25W	
3273	482205110102	1k 2% 0,25W	
3274	482205110102	1k 2% 0,25W	
3275	482205110102	1k 2% 0,25W	
3276	482205110102	1k 2% 0,25W	
3277	482205110102	1k 2% 0,25W	
3278	482205110102	1k 2% 0,25W	
3279	482205110102	1k 2% 0,25W	
3280	482205110102	1k 2% 0,25W	
3281	482205110102	1k 2% 0,25W	
3282	482205110102	1k 2% 0,25W	
3283	482205110102	1k 2% 0,25W	
3284	482205110102	1k 2% 0,25W	
3285	482205110102	1k 2% 0,25W	
3286	482205110102	1k 2% 0,25W	
3287	482205110102	1k 2% 0,25W	
3288	482205110102	1k 2% 0,25W	
3289	482205110102	1k 2% 0,25W	
3290	482205110102	1k 2% 0,25W	
3291	482205110102	1k 2% 0,25W	
3292	482205110102	1k 2% 0,25W	
3293	482205110102	1k 2% 0,25W	
3294	482205110102	1k 2% 0,25W	
3295	482205110102	1k 2% 0,25W	
3296	482205110102	1k 2% 0,25W	
3297	482205110102	1k 2% 0,25W	
3298	482205110102	1k 2% 0,25W	
3299	482205110102	1k 2% 0,25W	
3300	482205110102	1k 2% 0,25W	
3301	482205110102	1k 2% 0,25W	
3302	482205110102	1k 2% 0,25W	
3303	482205120472	4k7 5% 0,1W	
3304	482205110102	1k 2% 0,25W	
3305	482205110102	1k 2% 0,25W	
3306	482205110102	1k 2% 0,25W	
3307	482205110102	1k 2% 0,25W	
3308	482205110102	1k 2% 0,25W	
3309	482205110102	1k 2% 0,25W	
3310	482205110102	1k 2% 0,25W	
3311	482205110102	1k 2% 0,25W	
3312	482205110102	1k 2% 0,25W	
3313	482205110102	1k 2% 0,25W	
3314	482205110102	1k 2% 0,25W	
3315	482205110102	1k 2% 0,25W	
3316	482205110102	1k 2% 0,25W	
3317	482205110102	1k 2% 0,25W	
3318	482205110102	1k 2% 0,25W	
3320	482211710833	10k 1% 0,1W	
3321	482211710833	10k 1% 0,1W	
3322	482205110102	1k 2% 0,25W	
3323	482205110102	1k 2% 0,25W	
3324	482211711503	220R 1% 0,1W	
3325	482205120101	100R 5% 0,1W	
3326	482211652175	100R 5% 0,5W	
3327	482211652175	100R 5% 0,5W	
3328	482211652175	100R 5% 0,5W	
3329	482211710833	10k 1% 0,1W	
3330	482211652186	22R 5% 0,5W	
3331	482205120471	470R 5% 0,1W	
3332	482211711503	220R 1% 0,1W	
3333	482205120471	470R 5% 0,1W	
3334	482205120471	470R 5% 0,1W	
3335	482211652263	2k7 5% 0,5W	
3336	482205110102	1k 2% 0,25W	
3337	482205120101	100R 5% 0,1W	
3338	482211710833	10k 1% 0,1W	
3339	482211710833	10k 1% 0,1W	
3340	482211710833	10k 1% 0,1W	
3341	482211710833	10k 1% 0,1W	
3342	482205120684	680k 5% 0,1W	
3343	482211710833	10k 1% 0,1W	
3344	482211652213	180R 5% 0,5W	
3344	482211683883	470R 5% 0,5W	/FW-P88/22

3344	482211652276	3k9 5% 0,5W	/FW-P88/37
3344	482211652249	1k8 5% 0,5W	/FW-C85/37
3345	482205110102	1k 2% 0,25W	
3346	482211710837	100k 1% 0,1W	
3347	482205120101	100R 5% 0,1W	
3348	482205120101	100R 5% 0,1W	
3351	482211710833	10k 1% 0,1W	
3352	482205110102	1k 2% 0,25W	
3353	482205011002	1k 1% 0,4W	
3354	482205120334	330k 5% 0,1W	
3355	482211683872	220R 5% 0,5W	
3356	482211683872	220R 5% 0,5W	
3357	482205120471	470R 5% 0,1W	
3358	482205120471	470R 5% 0,1W	
3359	482205120471	470R 5% 0,1W	
3360	482205120471	470R 5% 0,1W	
3361	482205120471	470R 5% 0,1W	
3362	482205120471	470R 5% 0,1W	
3363	482205110102	1k 2% 0,25W	
3364	482205110102	1k 2% 0,25W	
3367	482211710833	10k 1% 0,1W	
3368	482211710833	10k 1% 0,1W	
3369	482211711449	2k2 1% 0,1W	
3370	482211711449	2k2 1% 0,1W	
3371	482205110102	1k 2% 0,25W	
3372	482205120121	120R 5% 0,1W	
3373	482211652263	2k7 5% 0,5W	
3374	482205110102	1k 2% 0,25W	
3376	482211711149	82k 1% 0,1W	
3377	482211710833	10k 1% 0,1W	
3378	482211711449	2k2 1% 0,1W	
3400	482205110102	1k 2% 0,25W	
3401	482205120121	120R 5% 0,1W	
3402	482211710833	10k 1% 0,1W	
3403	482211710833	10k 1% 0,1W	
3404	482205120182	1k8 5% 0,1W	
3405	482211712955	2k7 1% 0,1W	
3406	482205120472	4k7 5% 0,1W	
3407	482211710833	10k 1% 0,1W	
3409	482211710353	150R 1% 0,1W	
3410	482211711503	220R 1% 0,1W	
3411	482211711504	270R 1% 0,1W	
3412	482205120391	390R 5% 0,1W	
3413	482205120561	560R 5% 0,1W	
3414	482211711454	820R 1% 0,1W	
3415	482205120122	1k2 5% 0,1W	
3416	482205120182	1k8 5% 0,1W	
3417	482211712955	2k7 1% 0,1W	
3418	482205120472	4k7 5% 0,1W	
3419	482211710833	10k 1% 0,1W	
3420	482205120122	1k2 5% 0,1W	
4100	482205120008	0R Jumper 0805	
4102	482205120008	0R Jumper 0805	
4103	482205120008	0R Jumper 0805	
4104	482205120008	0R Jumper 0805	
4105	482205120008	0R Jumper 0805	
4202	482205120008	0R Jumper 0805	
4203	482205120008	0R Jumper 0805	
4204	482205120008	0R Jumper 0805	
4205	482205120008	0R Jumper 0805	
4206	482205120008	0R Jumper 0805	
4207	482205120008	0R Jumper 0805	
4208	482205120008	0R Jumper 0805	
4209	482205120008	0R Jumper 0805	
4210	482205120008	0R Jumper 0805	
4211	482205120008	0R Jumper 0805	
4212	482205120008	0R Jumper 0805	
4213	482205120008	0R Jumper 0805	
4214	482205120008	0R Jumper 0805	
4215	482205120008	0R Jumper 0805	
4216	482205120008	0R Jumper 0805	
4217	482205120008	0R Jumper 0805	
4218	482205120008	0R Jumper 0805	
4219	482205120008	0R Jumper 0805	
4220	482205120008	0R Jumper 0805	
4221	482205120008	0R Jumper 0805	
4222	482205120008	0R Jumper 0805	
4223	482205120008	0R Jumper 0805	
4224	482205120008	0R Jumper 0805	
4225	482205120008	0R Jumper 0805	
4226	482205120008	0R Jumper 0805	
4227	482205120008	0R Jumper 0805	
4228	482205120008	0R Jumper 0805	
4229	482205120008	0R Jumper 0805	
4230	482205120008	0R Jumper 0805	
4231	482205120008	0R Jumper 0805	
4232	482205120008	0R Jumper 0805	
4233	482205120008	0R Jumper 0805	
4234	482205120008	0R Jumper 0805	
4235	482205120008	0R Jumper 0805	
4236	482205120008	0R Jumper 0805	
4237	482205120008	0R Jumper 0805	
4238	482205120008	0R Jumper 0805	
4239	482205120008	0R Jumper 0805	
4240	482205120008	0R Jumper 0805	
4241	482205120008	0R Jumper 0805	
4242	482205120008	0R Jumper 0805	
4243	482205120008	0R Jumper 0805	
4244	482205120008	0R Jumper 0805	
4245	482205120008	0R Jumper 0805	

ELECTRICAL PARTS LIST - FRONT BOARD

RESISTORS

4246	482205120008	0R Jumper 0805
4247	482205120008	0R Jumper 0805
4248	482205120008	0R Jumper 0805
4249	482205120008	0R Jumper 0805
4250	482205120008	0R Jumper 0805
4251	482205120008	0R Jumper 0805
4252	482205120008	0R Jumper 0805
4253	482205120008	0R Jumper 0805
4254	482205120008	0R Jumper 0805
4255	482205120008	0R Jumper 0805
4256	482205120008	0R Jumper 0805
4257	482205120008	0R Jumper 0805
4258	482205120008	0R Jumper 0805
4259	482205120008	0R Jumper 0805
4260	482205120008	0R Jumper 0805
4261	482205120008	0R Jumper 0805
4262	482205120008	0R Jumper 0805
4263	482205120008	0R Jumper 0805
4264	482205120008	0R Jumper 0805
4265	482205120008	0R Jumper 0805
4266	482205120008	0R Jumper 0805
4267	482205120008	0R Jumper 0805
4268	482205120008	0R Jumper 0805
4269	482205120008	0R Jumper 0805
4270	482205120008	0R Jumper 0805
4271	482205120008	0R Jumper 0805
4272	482205120008	0R Jumper 0805
4273	482205120008	0R Jumper 0805
4274	482205120008	0R Jumper 0805
4400	482205120008	0R Jumper 0805
4401	482205120008	0R Jumper 0805
4402	482205120008	0R Jumper 0805
4403	482205120008	0R Jumper 0805
4404	482205120008	0R Jumper 0805
4405	482205120008	0R Jumper 0805
4500	482205120008	0R Jumper 0805
4501	482205120008	0R Jumper 0805

COILS & FILTERS

5200	482224272195	QUARZ 4,332MHz
5201	482215762552	Coil 2,2µH 5%
5202	482215751462	Coil 10µH 10%
5203	482215751462	Coil 10µH 10%
5204	482215762552	Coil 2,2µH 5%
5205	532224273686	RES CER 12MHz
5206	482224270938	RES XTL 32,768kHz
5207	482215762552	Coil 2,2µH 5%
5208	482215711228	Coil 100µH 5%
5209	482215711228	Coil 100µH 5%
5500	482215762552	Coil 2,2µH 5%
5501	482215762552	Coil 2,2µH 5%
5502	482215710586	Coil 2,2µH 10%

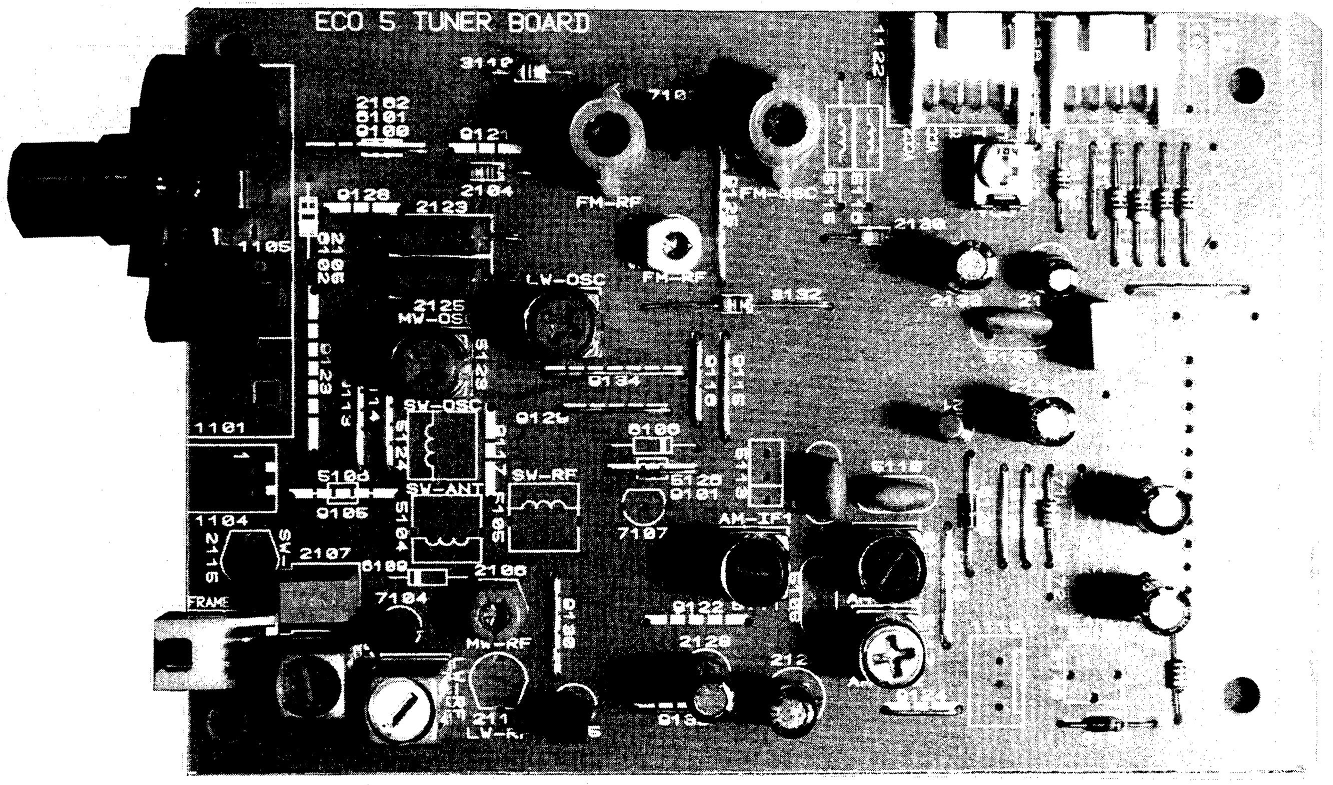
DIODES

6100	482213010791	LTL-1CHGE
6101	482213010791	LTL-1CHGE
6102	482213010791	LTL-1CHGE
6201	482213030621	1N4148
6203	482213030621	1N4148
6204	482213030621	1N4148
6205	482213030621	1N4148
6206	482213030621	1N4148
6207	482213031878	1N4003G
6208	482213031878	1N4003G
6209	482213030621	1N4148
6210	482213030621	1N4148
6211	482213030621	1N4148
6212	482213030621	1N4148
6213	482213030621	1N4148
6214	482213082978	LTL-1CHPE
6215	482213010791	LTL-1CHGE
6216	482213010791	LTL-1CHGE
6217	482213010791	LTL-1CHGE
6218	482213010791	LTL-1CHGE
6219	482213010791	LTL-1CHGE
6220	932215338676	LED VS LO3336UV-E7898
6221	482213010791	LTL-1CHGE
6222	932215338676	LED VS LO3336UV-E7898
6223	932215338676	LED VS LO3336UV-E7898
6224	932215338676	LED VS LO3336UV-E7898
6225	932215338676	LED VS LO3336UV-E7898
6226	482213031878	1N4003G
6229	932215337676	LED VS LB3333RT-E7898
6400	932215337676	LED VS LB3333RT-E7898
6401	482213030621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7200	482213060511	BC847B
7201	482213060511	BC847B
7202	482213060511	BC847B
7204	482220915449	74HC4094D
7205	482213060511	BC847B
7206	482213060511	BC847B
7209	313911052290	TMP88CU74YF - 'C83S52291'
7210	482220915449	74HC4094D
7211	532220911446	HEF4051BT
7212	482213060511	BC847B
7213	932214526668	M24C02-WMN6
7214	482220931981	SAA6579T/V1
7215	482213060511	BC847B
7216	482213010165	GR1U28XP
7217	482213060511	BC847B
7218	482220915449	74HC4094D
7220	482213060511	BC847B
7400	482213060511	BC847B

Note : Only the parts mentioned in this list are normal service spare parts.

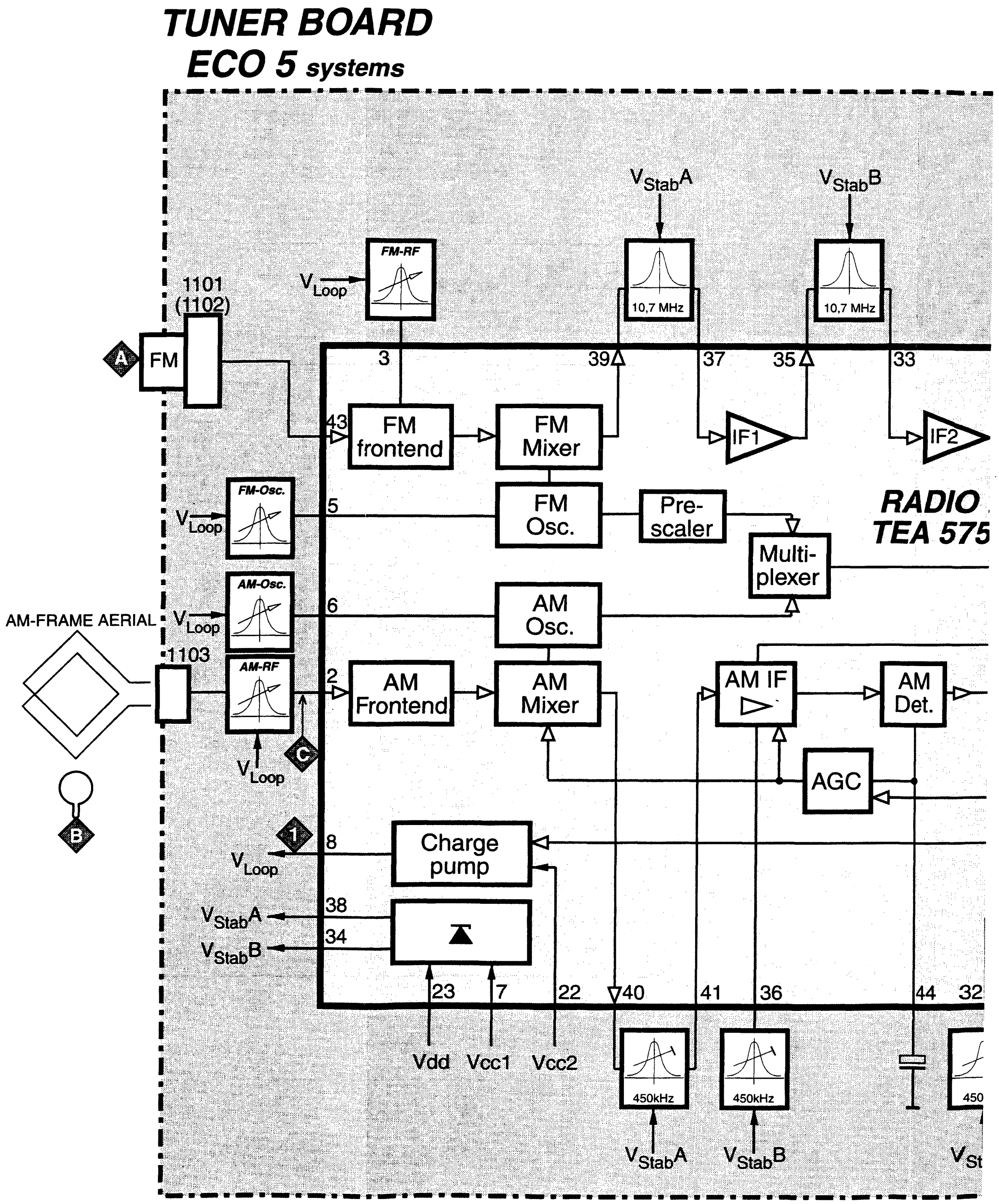

ECO 5 TUNER BOARD
FM-RF
FM-OSC
LW-OSC
MW-OSC
SW-OSC
SW-ANT
SW-RF
AM-IF1
MW-RF
LW-RF
FRAME
1105
1101
1104
1102
7104
7107
7109

TUNER BOARD ECO5

TABLE OF CONTENTS

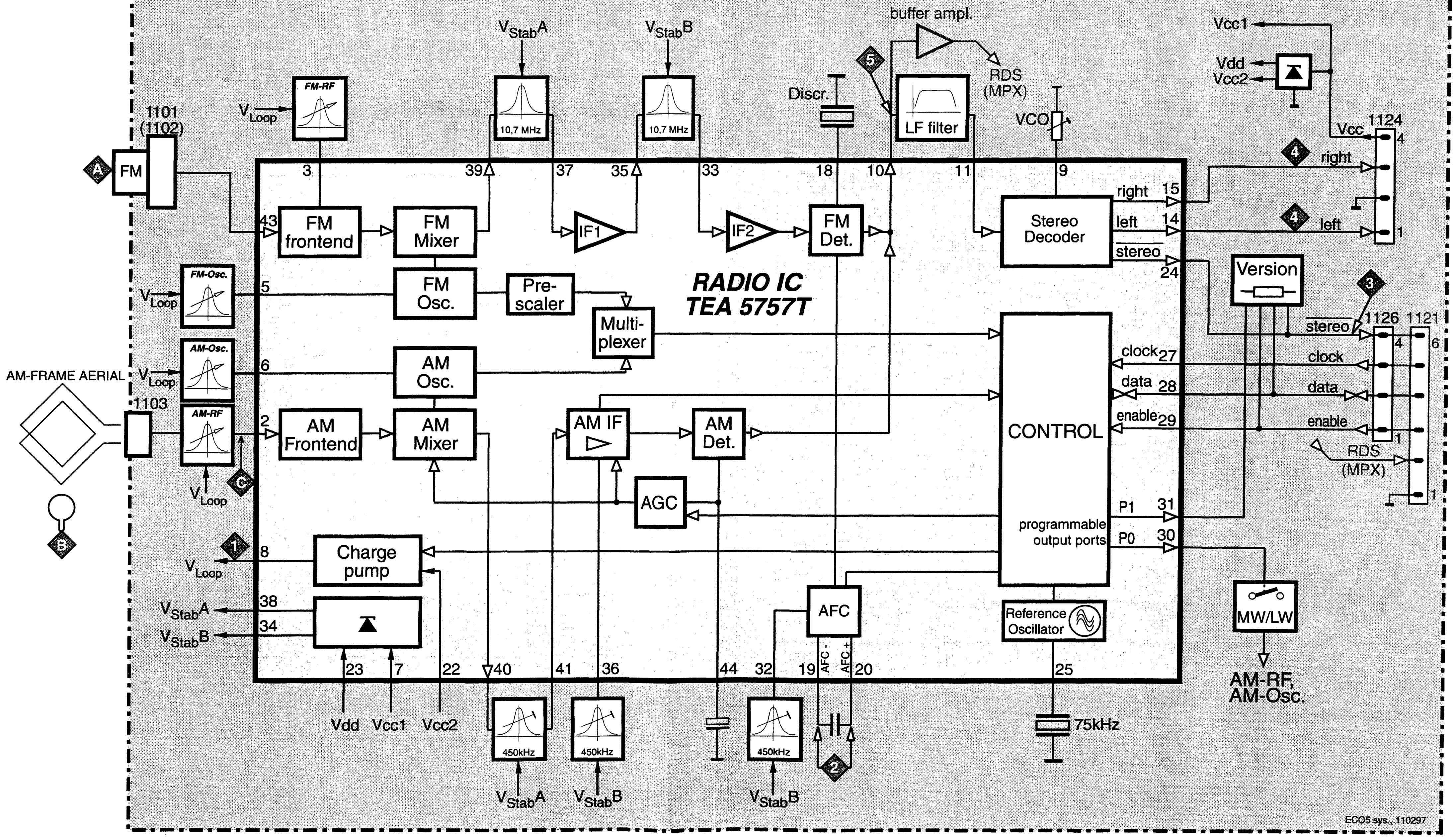
Blockdiagram 7B-1
Adjustmant table 7B-2
Component layout...7B-2
Circuit diagram 7B-3
Partslist 7B-4

BLOCKDIAGRAM


TUNER BOARD
ECO 5 systems
RADIO
TEA 575
FM
A
1101 (1102)
AM-FRAME AERIAL
1103
B
C
1
FM-RF
FM-Osc.
AM-Osc.
AM-RF
VLoop
VStabA
VStabB
10,7 MHz
10,7 MHz
FM frontend
FM Mixer
FM Osc.
Pre-scaler
Multi-plexer
IF1
IF2
AM Osc.
AM Frontend
AM Mixer
AM IF
AM Det.
AGC
Charge pump
450kHz
450kHz
Vdd
Vcc1
Vcc2
3
39
37
35
33
43
5
6
2
8
38
34
23
7
22
40
41
36
44
32

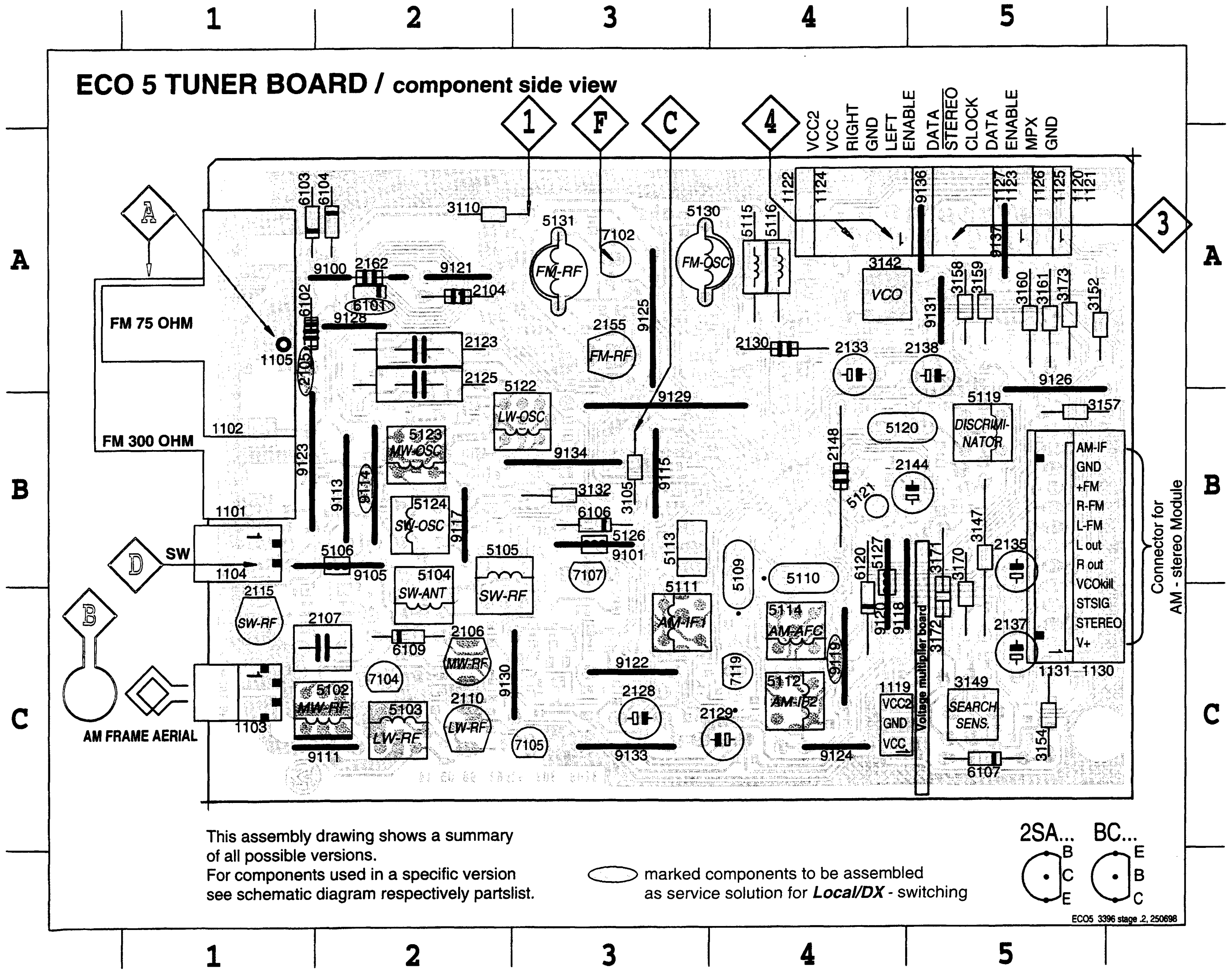
BLOCKDIAGRAM

TUNER BOARD
ECO 5 systems


RADIO IC
TEA 5757T
FM
1101
(1102)
FM-RF
VLoop
FM frontend
FM Mixer
FM Osc.
Pre-scaler
Multi-plexer
FM-Osc.
AM-Osc.
AM-RF
AM-FRAME AERIAL
1103
AM Osc.
AM Frontend
AM Mixer
AM IF
AGC
AM Det.
Charge pump
VStabA
VStabB
Vdd
Vcc1
Vcc2
10,7 MHz
IF1
IF2
FM Det.
Discr.
buffer ampl.
RDS (MPX)
LF filter
VCO
Stereo Decoder
right
left
stereo
CONTROL
clock
data
enable
programmable output ports
P1
P0
AFC
AFC -
AFC +
Reference Oscillator
75kHz
450kHz
Version
MW/LW
AM-RF, AM-Osc.
Vcc
1124
1126
1121
Vdd
Vcc2
Vcc1
A
B
C
1
2
3
4
5
3
39
37
35
33
18
10
11
9
15
14
24
27
28
29
31
30
25
43
5
6
2
8
38
34
23
7
22
40
41
36
44
32
19
20
ECO5 sys., 110297

1101 A1	2106 C2	2137 C5	3149 C5	3173 A5	5114 C4	5130 A3	7104 C2	9117 B2	9129 B3
1102 A1	2107 C2	2138 A5	3152 A5	5102 C2	5115 A4	5131 A3	7105 C3	9118 B4	9130 C3
1103 C1	2110 C2	2144 B5	3154 C5	5103 C2	5116 A4	6101 A2	7107 B3	9119 C4	9131 A5
1104 B1	2115 C1	2148 B4	3157 B5	5104 C2	5119 B5	6102 A1	7119 C4	9120 B4	9133 C3
1105 A1	2123 A2	2155 A3	3158 A5	5105 B2	5120 B4	6103 A1	9100 A2	9121 A2	9134 B3
1119 C5	2125 A2	2162 A2	3159 A5	5106 B2	5121 B4	6104 A2	9101 B3	9122 C3	9136 A5
1120 A5	2128 C3	3105 B3	3160 A5	5109 B4	5122 B3	6106 B3	9105 B2	9123 B1	9137 A5
1130 B5	2129 C4	3110 A2	3161 A5	5110 B4	5123 B2	6107 C5	9111 C2	9124 C4	
1131 B5	2130 A4	3132 B3	3170 C5	5111 C3	5124 B2	6109 C2	9113 B2	9125 A3	
2104 A2	2133 A4	3142 A4	3171 C5	5112 C4	5126 B3	6120 C4	9114 B2	9126 B5	
2105 A1	2135 B5	3147 B5	3172 C5	5113 B3	5127 B4	7102 A3	9115 B3	9128 A2	

ECO 5 TUNER BOARD / component side view

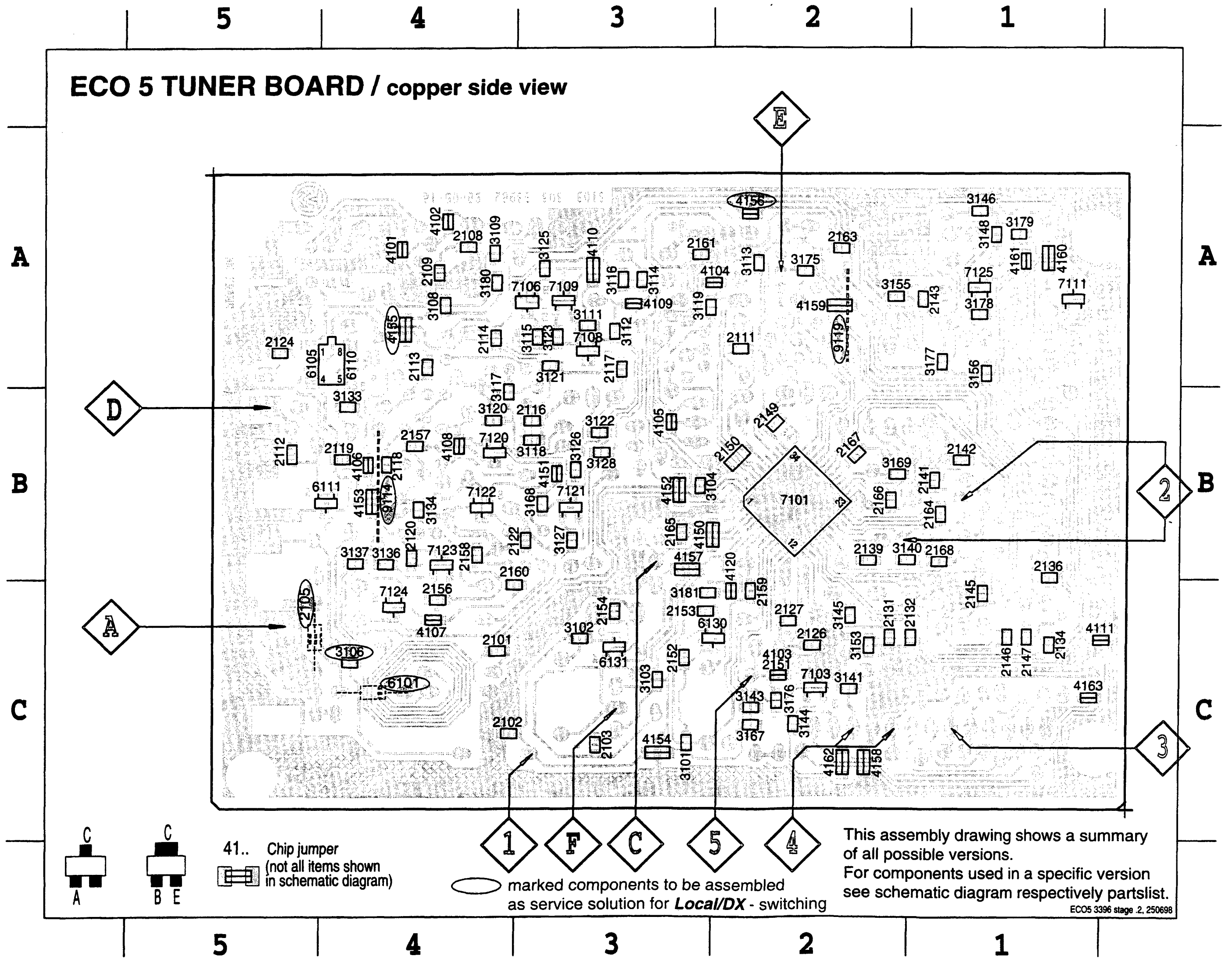

1
2
3
4
5
A
B
C
1
F
C
4
3
A
D
B
D
VCC2
VCC
RIGHT
GND
LEFT
ENABLE
DATA
STEREO
CLOCK
DATA
ENABLE
MPX
GND
FM 75 OHM
FM 300 OHM
SW
AM FRAME AERIAL
FM-RF
FM-OSC
VCO
LW-OSC
MW-OSC
SW-OSC
SW-ANT
SW-RF
MW-RF
LW-RF
AM-IF1
AM-AFC
AM-IF2
DISCRIMI-NATOR
SEARCH SENS.
Voltage multiplier board
AM-IF
GND
+FM
R-FM
L-FM
L out
R out
VCOkill
STSIG
STEREO
V+
Connector for AM - stereo Module
2SA... BC...
B C E
E B C
ECO5 3396 stage 2, 250698

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

marked components to be assembled as service solution for *Local/DX* - switching

2101 C4	2118 B4	2139 B2	2153 C3	2166 B2	3112 A3	3123 A3	3143 C2	3175 A2	4105 B3	4153 B4	6105 A4	7120 B4
2102 C4	2119 B4	2141 B1	2154 C3	2167 B2	3113 A2	3125 A3	3144 C2	3176 C2	4106 B4	4154 C3	6110 A4	7121 B3
2103 C3	2120 B4	2142 B1	2156 C4	2168 B1	3114 A3	3126 B3	3145 C2	3177 A1	4107 C4	4155 A4	6111 B4	7122 B4
2108 A4	2122 B3	2143 A1	2157 B4	3101 C3	3115 A3	3127 B3	3146 A1	3178 A1	4108 B4	4156 A2	6130 C2	7123 B4
2109 A4	2124 A5	2145 C1	2158 B4	3102 C3	3116 A3	3128 B3	3148 A1	3179 A1	4109 A3	4157 B3	6131 C3	7124 C4
2111 A2	2126 C2	2146 C1	2159 C2	3103 C3	3117 B4	3133 B4	3153 C2	3180 A4	4110 A3	4158 C2	7101 B2	7125 A1
2112 B5	2127 C2	2147 C1	2160 C4	3104 B3	3118 B3	3134 B4	3155 A2	3181 C3	4111 C1	4159 A2	7103 C2	
2113 A4	2131 C2	2149 B2	2161 A3	3106 C4	3119 A3	3136 B4	3156 A1	4101 A4	4120 C2	4160 A1	7106 A3	
2114 A4	2132 C1	2150 B2	2163 A2	3108 A4	3120 B4	3137 B4	3167 C2	4102 A4	4150 B2	4161 A1	7108 A3	
2116 B3	2134 C1	2151 C2	2164 B1	3109 A4	3121 A3	3140 B2	3168 B3	4103 C2	4151 B3	4162 C1	7109 A3	
2117 A3	2136 B1	2152 C3	2165 B3	3111 A3	3122 B3	3141 C2	3169 B2	4104 A2	4152 B3	4163 C1	7111 A1	

ECO 5 TUNER BOARD / copper side view


5
4
3
2
1
A
B
C
E
D
A
2
3
1
F
C
5
4
7101
C
C
A
B E
ECO5 3396 stage 2, 250698

41.. Chip jumper (not all items shown in schematic diagram)

marked components to be assembled as service solution for *Local/DX* - switching

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

TUNER /

Wavei
VARICAP
FM 87.5 - 1((65.81 - 74, 87
MW FM/AM-version 530 - 17
FM/MW-versior 531 - 16
LW 153 - 27
MW FM/MW/LW- ve 531 - 16(
FM IF
FM
FM RF
FM 87.5 - 1((65.81 - 74, 87
VCO
FM
AM IF
MW
AM AFC **MW**
AM RF [3]
MW [4] FM/MW/LW- anc (9kHz 531 - 16
LW
MW FM/AM-versioı 530 - 17

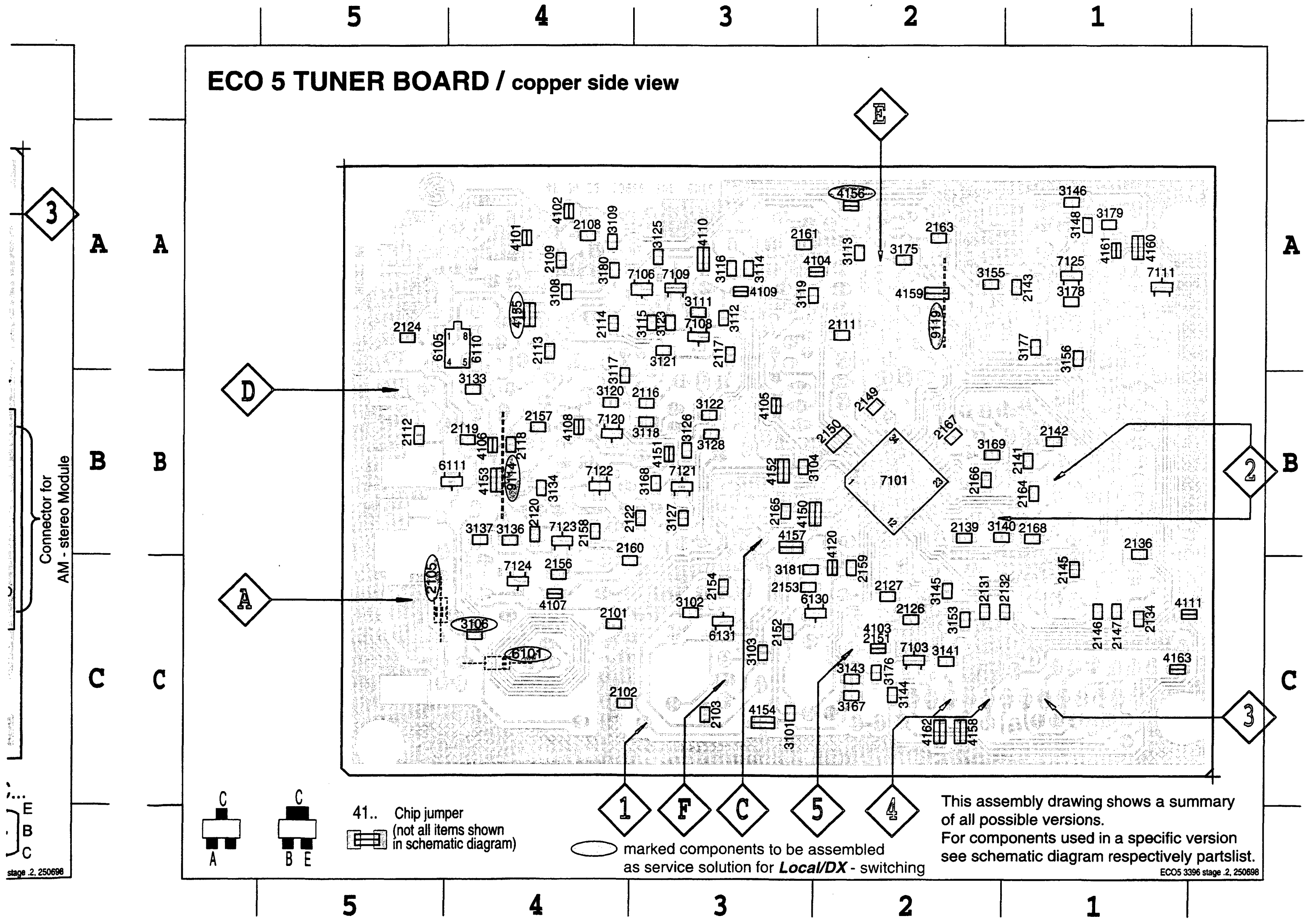
Use service te

[1] If sensitivity (input signa

[3] For AM RF

↕ Repeat

2101 C4	2118 B4	2139 B2	2153 C3	2166 B2	3112 A3	3123 A3	3143 C2	3175 A2	4105 B3	4153 B4	6105 A4	7120 B4
2102 C4	2119 B4	2141 B1	2154 C3	2167 B2	3113 A2	3125 A3	3144 C2	3176 C2	4106 B4	4154 C3	6110 A4	7121 B3
2103 C3	2120 B4	2142 B1	2156 C4	2168 B1	3114 A3	3126 B3	3145 C2	3177 A1	4107 C4	4155 A4	6111 B4	7122 B4
2108 A4	2122 B3	2143 A1	2157 B4	3101 C3	3115 A3	3127 B3	3146 A1	3178 A1	4108 B4	4156 A2	6130 C2	7123 B4
2109 A4	2124 A5	2145 C1	2158 B4	3102 C3	3116 A3	3128 B3	3148 A1	3179 A1	4109 A3	4157 B3	6131 C3	7124 C4
2111 A2	2126 C2	2146 C1	2159 C2	3103 C3	3117 B4	3133 B4	3153 C2	3180 A4	4110 A3	4158 C2	7101 B2	7125 A1
2112 B5	2127 C2	2147 C1	2160 C4	3104 B3	3118 B3	3134 B4	3155 A2	3181 C3	4111 C1	4159 A2	7103 C2	
2113 A4	2131 C2	2149 B2	2161 A3	3106 C4	3119 A3	3136 B4	3156 A1	4101 A4	4120 C2	4160 A1	7106 A3	
2114 A4	2132 C1	2150 B2	2163 A2	3108 A4	3120 B4	3137 B4	3167 C2	4102 A4	4150 B2	4161 A1	7108 A3	
2116 B3	2134 C1	2151 C2	2164 B1	3109 A4	3121 A3	3140 B2	3168 B3	4103 C2	4151 B3	4162 C1	7109 A3	
2117 A3	2136 B1	2152 C3	2165 B3	3111 A3	3122 B3	3141 C2	3169 B2	4104 A2	4152 B3	4163 C1	7111 A1	

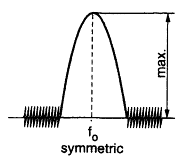
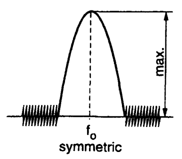

5
4
3
2
1
A
B
C
Connector for AM - stereo Module
E
B
C
stage 2, 250698
7101
A
B
C
D
E
F
1
2
3
4
5
C
A
C
B E
41.. Chip jumper (not all items shown in schematic diagram)
ECO5 3396 stage .2, 250698

ECO 5 TUNER BOARD / copper side view

marked components to be assembled as service solution for ***Local/DX*** - switching

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

TUNER ADJUSTMENT TABLE (ECO5 FM/MW- and FM/MW/LW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)			108MHz	5130	1	8V ±0.2V
			87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
MW FM/AM-version, 10kHz grid 530 - 1700kHz			1700kHz	5123		8V ±0.2V
			530kHz	check		1.1V ±0.4V
FM/MW-version, 9kHz grid 531 - 1602kHz			1602kHz	5123		6.9V ±0.2V
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz			1602kHz	5123		8V ±0.2V
			531kHz	check		1.1V ±0.4V
FM IF						
FM	10.7MHz, 50mV continuous wave	F	IC 7101 21 2141 shortcircuit to block AFC	5119	2	0 ± 3 mV DC
FM RF						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	A	108MHz	2155	4	MAX ↕
	87.5MHz (65.81MHz)	mod=1kHz Δf=±22.5kHz	87.5MHz (65.81MHz)	5131		
VCO						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz [1]
AM IF						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with short wire to ground (pin 4)	C Δf=±15kHz V_{RF} = 3mV	IC 7101 36 100nF 220R	5111	4	 max. f_o symmetric
			IC 7101 40 100nF 220R see remark [2]	5112		
AM AFC **MW**		C continuous wave V_{RF} = 10mV		5114	2	0 ± 2 mV DC
AM RF [3]						
MW [4] FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	1494kHz	B Δf = ±30kHz V_{RF} as low as possible	1494kHz	2106	4	 max. f_o symmetric ↕
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz		1500kHz	2106		↕
	560kHz		560kHz	5102		

ECO5, discr. coil, 090797

Use service test program. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

[1] If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

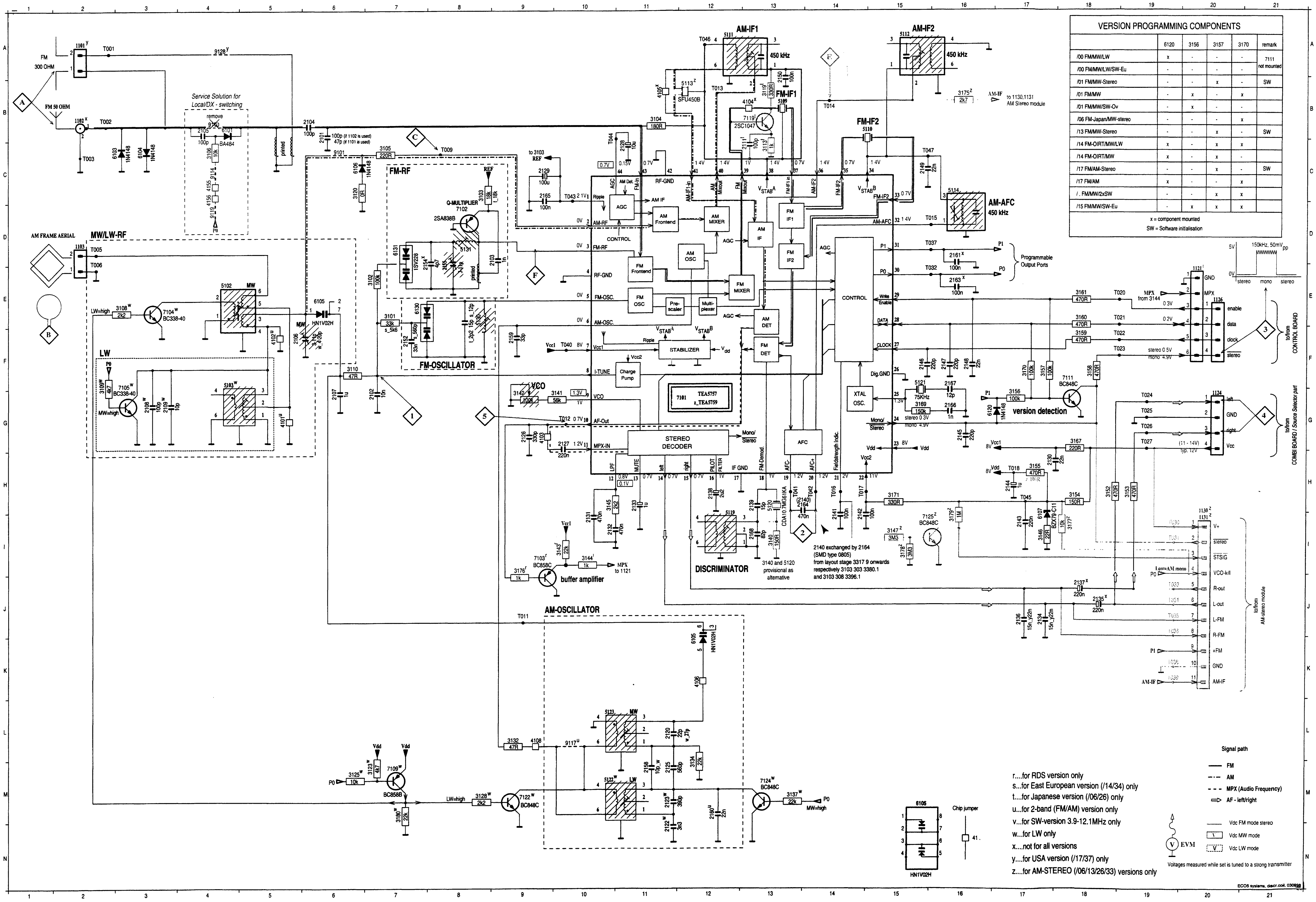
[2] RC network serves for damping the IF-filter while adjusting the other one.

[3] For AM RF adjustments the original frame antenna has to be used !

[4] MW has to be aligned before LW.

↕ Repeat

TUNER BOARD ECO5 / Systems


FM 300 OHM
FM 50 OHM
1101
1102
T001
T002
T003
9128
6103 1N4148
6104 1N4148
Service Solution for Local/DX - switching
remove 9100
2105 100p
6101 BA484
3106 10k
4155
4156
9114
9119
2104 100p
2101 100p (if 1102 is used) 47p (if 1101 is used)
9101
3105 220R
T009
AM FRAME AERIAL
MW/LW-RF
1103
T005
T006
5102 MW
LW=high
3108 2k2
7104 BC338-40
LW
7105 BC338-40
3109 4k7
MW=high
2108 100p
2109 10p
5103
4101
4102
6105 HN1V02H
2106
3110 47R
2107 1u
2102 10n
FM-RF
Q-MULTIPLIER 7102
2SA838B
REF
6131 1SV228
2154 4p7
2155 4p7
5131
6106 1N4148
3120 0R
3102 100k
3101 33k
FM-OSCILLATOR
6130
5130
2152 33n
2153 1n
to 3103 REF
2129 100u
2165 100n
T043
3104 180R
T044
2128 10u
4105
5113 SFU450B
T013
AM-IF1
5111
450 kHz
T046
2150 100n
FM-IF1
5109
3119 330R
4104
7119 2SC1047
2111 100p
3113 1k
T014
AM-IF2
5112
450 kHz
3175 2k7
AM-IF to 1130,1131 AM Stereo module
FM-IF2
5110
T047
2149 22n
5114
AM-AFC
450 kHz
T015
AGC
AM IF
AM Frontend
AM MIXER
CONTROL
AM OSC
AM IF
FM IF1
FM IF2
FM Frontend
FM OSC
Pre-scaler
Multi-plexer
FM MIXER
AM DET
FM DET
STABILIZER
Charge Pump
I-TUNE
VCO
AF-Out
MPX-IN
STEREO DECODER
AFC
XTAL OSC.
7101 TEA5757 z_TEA5759
P1
P0
Programmable Output Ports
T037
2161 100n
T032
2163 100n
Write Enable
DATA
CLOCK
Dig.GND
5121 75KHz
3169 150k
2167 12p
2166 1n
Mono/Stereo
Vdd
Vcc1
3142 100k
3141 56k
T012
2126 330p
4103
2127 220n
3161 470R
3160 470R
3159 470R
T020
T021
T022
T023
MPX from 3144
stereo 0.5V
mono 4.9V
1121
1126
GND
MPX
enable
data
clock
stereo
to/from CONTROL BOARD
5V
150kHz, 50mVpp
0V
stereo
mono
stereo
3170 100k
3157 100k
3158 470R
7111 BC848C
3156 100k
6120 1N4148
version detection
1124
T024
T025
T026
T027
left
GND
right
Vcc
to/from COMBI BOARD / Source Selector part
3167 220R
2130 22n
3155 470R
2144 100n
T018
T045
6107 BZX79-C11
2143 220n
3146 22R
3177 10k
3154 150R
3152 470R
3153 470R
3171 330R
3179 1M
7125 BC848C
3147 3M3
3178 3M3
2141 100n
2142 100n
T016
T017
1130
1131
V+
stereo
STS/G
VCO-kill
R-out
L-out
L-FM
R-FM
+FM
GND
AM-IF
to/from AM-stereo module
2137 220n
2135 220n
2136 15n
2134 15n
2131 470n
3145 2k2
2132 470n
2133 1u
2138 2u2
5119
DISCRIMINATOR
2139 15p
5120 CDA10.7MG61KA
2168 82p
3140 150R
2164 (2140) 470n
T041
T042
3140 and 5120 provisional as alternative
2140 exchanged by 2164 (SMD type 0805) from layout stage 3317 9 onwards respectively 3103 303 3380.1 and 3103 308 3396.1
3143 22k
3144 1k
MPX to 1121
7103 BC858C
3176 1k
buffer amplifier
AM-OSCILLATOR
T011
6105 HN1V02H
4106
5123 MW
5122 LW
2120 22p
2125 560p
2158 10p
3134 22k
2123 390p
2122 3k3
2160 22n
3132 47R
4108
9117
7109 BC858B
3123 4k7
3125 10k
3180 22k
LW=high
3128 2k2
7122 BC848C
7124 BC848C
3137 22k
MW=high
P0
Vdd
6105
HN1V02H
Chip jumper
Signal path
FM
AM
MPX (Audio Frequency)
AF - left/right
EVM
Vdc FM mode stereo
Vdc MW mode
Vdc LW mode
Voltages measured while set is tuned to a strong transmitter
ECO5 systems, discr.coil, 030898

VERSION PROGRAMMING COMPONENTS

	6120	3156	3157	3170	remark
/00 FM/MW/LW	x	-	-	-	7111 not mounted
/00 FM/MW/LW/SW-Eu	-	-	-	-	
/01 FM/MW-Stereo	-	-	x	-	SW
/01 FM/MW	-	x	-	x	
/01 FM/MW/SW-Ov	-	x	-	-	
/06 FM-Japan/MW-stereo	-	-	-	x	
/13 FM/MW-Stereo	-	-	x	-	SW
/14 FM-OIRT/MW/LW	x	-	x	x	
/14 FM-OIRT/MW	x	-	x	-	
/17 FM/AM-Stereo	-	-	x	-	SW
/17 FM/AM	x	-	-	x	
/ . FM/MW/2xSW	-	-	x	x	
/15 FM/MW/SW-Eu	-	x	x	x	

x = component mounted
SW = Software initialisation

r....for RDS version only
s...for East European version (/14/34) only
t....for Japanese version (/06/26) only
u...for 2-band (FM/AM) version only
v...for SW-version 3.9-12.1MHz only
w...for LW only
x....not for all versions
y....for USA version (/17/37) only
z....for AM-STEREO (/06/13/26/33) versions only

1101	A 1
1102	B 2
1103	D 2
1121	E20
1124	G20
1126	E20
1130	I20
1131	I20
2101	C 6
2102	G 7
2103	D 9
2104	B 6
2106	F 5
2107	G 6
2108	G 3
2109	G 3
2111	C13
2120	L11
2122	N11
2123	M11
2125	M11
2126	G 9
2127	G10
2128	C11
2129	C 9
2130	H17
2131	I10
2132	I10
2133	H11
2134	J17
2135	J18
2136	J17
2137	J18
2138	H12
2139	H13
2140	H14
2141	H14
2142	H14
2143	I17
2144	H17
2145	G16
2146	F15
2147	F16
2148	F16
2149	C15
2150	B13
2152	F 7
2153	E 8
2154	E 7
2155	D 8
2158	M11
2159	F 9
2160	M12
2161	D16
2163	E16
2164	H14
2165	C 9
2166	G16
2167	F16
2168	I 13
3101	E 7
3102	E 7
3103	C 8
3104	B11
3105	C 7
3108	E 3
3109	F 2
3110	F 6
3113	C13
3119	B13
3120	C 6
3123	M 7
3125	M 6
3128	M 8
3132	L 9
3134	M12
3137	M13
3140	I13
3141	G10
3142	G 9
3143	I10
3144	I10
3145	H10
3146	I17
3147	I15
3152	H18
3153	H19
3154	H18
3155	H17
3156	G17
3157	F17
3158	F18
3159	F18
3160	E18
3161	E18
3167	G18
3169	G15
3170	F17
3171	H15
3175	B16
3176	J 9
3177	I18
3178	I15
3179	I16
3180	M7
4101	G 5
4102	F 5
4103	G 9
4104	B13
4105	B11
4106	K12
4108	L 9
5102	E 4
5103	F 4
5109	B13
5110	B14
5111	A13
5112	A15
5113	B12
5114	C16
5119	I 12
5120	H13
5121	F15
5122	M11
5123	L11
5130	E 8
5131	D 8
6103	C 2
6104	C 3
6105	K12
6105	E 6
6106	C 6
6107	H17
6120	G16
6130	E 7
6131	D 7
7101	G11
7102	D 8
7103	I 9
7104	E 3
7105	F 2
7109	M 7
7111	F18
7119	B13
7122	M 9
7124	M13
7125	I16
9100	B 4
9101	C 6
9117	L10
9128	A 4

ELECTRICAL PARTS LIST - ECO5 TUNER BOARD

MISCELLANEOUS

1101	4822 267 31505	Antenna Socket 300R	
1102	4822 267 10283	Antenna Socket Coax IEC 75R	

CAPACITORS

2101	5322 122 32531	100pF 5% 50V	
2101	4822 126 13692	47pF 1% 63V	for USA
2102	4822 122 33177	10nF 20% 50V	
2103	5322 122 34123	1nF 10% 50V	
2104	4822 122 33195	100pF 10% 50V	
2106	4822 125 50355	Trimmer 4-20pF	for LW version
2106	4822 125 60101	Trimmer 3-11pF 100V	
2107	4822 121 51319	1µF 10% 63V	
2108	5322 122 32531	100pF 5% 50V	for LW version
2109	5322 122 32448	10pF 5% 50V	for LW version
2120	4822 126 13691	27pF 1% 63V	for LW version
2120	5322 122 32658	22pF 5% 50V	
2122	4822 122 33891	3,3nF 10% 63V	for LW version
2125	4822 121 51381	560pF 5% 400V	
2126	5322 122 31863	330pF 5% 50V	
2127	4822 126 13473	220nF +80/-20% 50V	
2128	4822 124 41579	10µF 20% 50V	
2129	4822 124 41584	100µF 20% 10V	
2130	4822 126 11585	22nF+80/- 20% 25V	
2131	4822 122 33325	470nF 16V	
2132	4822 122 33325	470nF 16V	
2131	4822 126 13482	470nF +80/- 20% 16V	
2132	4822 126 13482	470nF +80/- 20% 16V	
2133	4822 124 40242	1µF 20% 63V	
2134	4822 126 13188	15nF 5% 63V	
2134	5322 122 32654	22nF 10% 63V	for USA
2135	4822 124 40746	0,22µF 20% 63V	
2136	4822 126 13188	15nF 5% 63V	
2136	5322 122 32654	22nF 10% 63V	for USA
2137	4822 124 40746	0,22µF 20% 63V	
2138	4822 124 41576	2,2µF 20% 50V	
2139	4822 126 14236	50V 15pF 5%	
2140	4822 121 51252	470nF 5% 63V	
2141	4822 126 10002	100nF 20% 25V	
2142	4822 126 10002	100nF 20% 25V	
2143	4822 126 13473	220nF +80/-20% 50V	
2144	4822 124 40242	1µF 20% 63V	
2145	4822 122 33575	220pF 5% 50V	
2146	4822 122 33575	220pF 5% 50V	
2147	4822 122 33575	220pF 5% 50V	
2148	4822 126 11585	22nF+80/- 20% 25V	
2149	5322 122 32654	22nF 10% 63V	
2150	4822 122 31947	100nF 20% 63V	
2152	5322 116 80853	560pF 5% 63V	for East. Europe
2152	4822 126 12105	33nF 5% 63V	
2153	4822 122 32139	12pF 2% 63V	for East. Europe
2153	4822 122 32504	15pF 2% 63V	
2155	4822 125 60101	Trimmer 3-11pF 100V	
2158	5322 122 32448	10pF 5% 50V	for LW version
2159	5322 122 32659	33pF 5% 50V	
2160	5322 122 32654	22nF 10% 63V	
2161	4822 126 10002	100nF 20% 25V	
2163	4822 126 10002	100nF 20% 25V	
2164	4822 126 13482	470nF +80/- 20% 16V	
2165	4822 126 10002	100nF 20% 25V	
2166	5322 122 34123	1nF 10% 50V	
2167	4822 122 32139	12pF 2% 63V	
2168	4822 126 13695	82pF 1% 63V	

RESISTORS

3101	4822 051 20562	5k6 5% 0,1W	for East. Europe
3101	4822 051 20333	33k 5% 0,1W	
3102	4822 051 20104	100k 5% 0,1W	
3103	4822 117 10965	18k 1% 0,1W	
3104	4822 117 11448	180R 1% 0,1W	
3105	4822 116 83872	220R 5% 0,5W	
3108	4822 117 11449	2k2 1% 0,1W	for LW version
3109	4822 051 20472	4k7 5% 0,1W	for LW version
3110	4822 116 52195	47R 5% 0,5W	
3120	4822 051 20008	0R Jumper 0805	
3123	4822 051 20472	4k7 5% 0,1W	for LW version
3125	4822 117 10833	10k 1% 0,1W	for LW version
3128	4822 117 11449	2k2 1% 0,1W	for LW version
3132	4822 116 52195	47R 5% 0,5W	
3134	4822 051 20223	22k 5% 0,1W	
3137	4822 051 20223	22k 5% 0,1W	for LW version
3140	4822 051 20008	0R Jumper 0805	
		5120=CDA10.7MG40K	
3140	4822 117 10353	150R 1% 0,1W	
		5120=CDA10.7MG61KA	
3141	4822 051 20563	56k 5% 0,1W	
3142	4822 100 11163	Trimmer 100k 30% 0,1W	
3143	4822 051 20223	22k 5% 0,1W	for RDS version
3144	4822 051 10102	1k 2% 0,25W	for RDS version
3145	4822 117 11449	2k2 1% 0,1W	
3146	4822 051 20229	22R 5% 0,1W	
3152	4822 116 83883	470R 5% 0,5W	
3153	4822 051 20471	470R 5% 0,1W	
3154	4822 116 83868	150R 5% 0,5W	
3155	4822 051 20471	470R 5% 0,1W	
3156	4822 051 20104	100k 5% 0,1W	for /21/30/33 only
3157	4822 116 52234	100k 5% 0,5W	for East. Europe
3158	4822 116 83883	470R 5% 0,5W	
3159	4822 116 83883	470R 5% 0,5W	
3160	4822 116 83883	470R 5% 0,5W	
3161	4822 116 83883	470R 5% 0,5W	
3167	4822 117 11503	220R 1% 0.1W	
3169	4822 051 20154	150k 5% 0,1W	
3170	4822 116 52234	100k 5% 0,5W	
3171	4822 116 52219	330R 5% 0,5W	

ELECTRICAL PARTS LIST - ECO5 TUNER BOARD

3176	4822 051 10102	1k 2% 0,25W	for RDS version
3180	4822 051 20223	22k 5% 0,1W	for LW version
4101	4822 051 20008	0R Jumper 0805	for 2-Band only
4102	4822 051 20008	0R Jumper 0805	for 2-Band only
4103	4822 051 20008	0R Jumper 0805	
4104	4822 051 20008	0R Jumper 0805	
4105	4822 051 20008	0R Jumper 0805	
4106	4822 051 20008	0R Jumper 0805	
4108	4822 051 20008	0R Jumper 0805	
4111	4822 051 20008	0R Jumper 0805	
4120	4822 051 20008	0R Jumper 0805	
4150	4822 051 10008	0R Jumper 1206	
4151	4822 051 20008	0R Jumper 0805	
4152	4822 051 10008	0R Jumper 1206	
4153	4822 051 10008	0R Jumper 1206	
4154	4822 051 10008	0R Jumper 1206	
4155	4822 051 10008	0R Jumper 1206	
4156	4822 051 20008	0R Jumper 0805	
4157	4822 051 10008	0R Jumper 1206	
4158	4822 051 10008	0R Jumper 1206	
4159	4822 051 10008	0R Jumper 1206	
4162	4822 051 10008	0R Jumper 1206	

COILS & FILTERS

5102	4822 157 71634	MW RF Coil	
5103	4822 157 71635	LW RF Coil	for LW version
5109	4822 242 70665	Ceram Filter 10,7MHz	
5110	4822 242 70665	Ceram Filter 10,7MHz	
5111	4822 158 60511	AM-IF Filter 450kHz	
5112	4822 157 70302	AM-IF Filter 450kHz	
5114	4822 157 70302	AM-IF Filter 450kHz	
5119	4822 157 11443	Discriminator 10,7MHz	
5120	4822 242 82065	Cer. Disc. 10,7MG40K	
5120	4822 242 10251	Cer. Disc.10,7MG61KA-TF21	
5121	4822 242 10261	Quartz 75kHz	
5122	4822 157 60517	Osc. Coil LW	for LW version
5123	4822 157 60517	Osc. Coil MW	
5130	4822 156 30947	RF-Coil 1.5T	
5131	4822 156 30947	RF-Coil 1.5T	

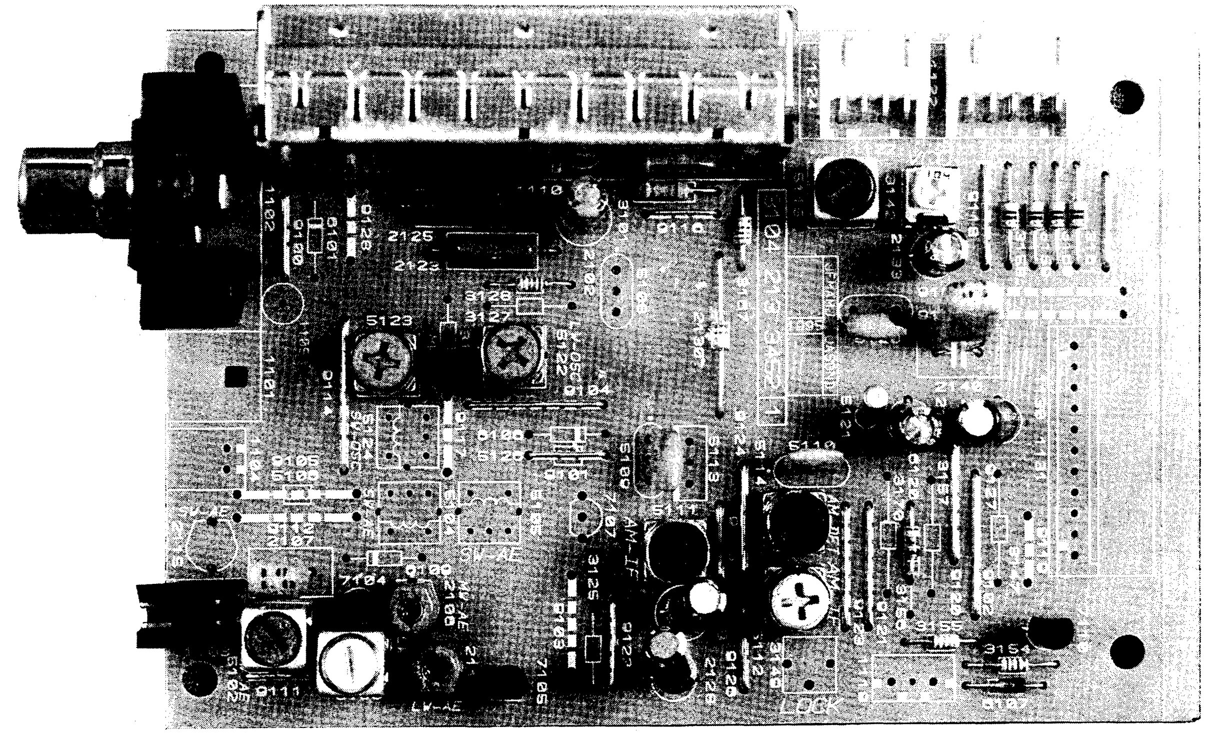
DIODES

6103	4822 130 30621	1N4148	
6104	4822 130 30621	1N4148	
6105	4822 130 83075	HN1V02H-B	
6106	4822 130 30621	1N4148	
6107	4822 130 34488	BZX79-B11	
6120	4822 130 30621	1N4148	not for /21/30/33
6130	4822 130 82833	1SV228	
6131	4822 130 82833	1SV228	

TRANSISTORS & INTEGRATED CIRCUITS

7101	4822 209 90924	TEA5757H/V1	
7102	4822 130 60093	2SA838B	
7103	4822 130 42513	BC858C	for RDS version
7104	5322 130 44779	BC338-40	for LW version
7105	5322 130 44779	BC338-40	for LW version
7109	5322 130 41983	BC858B	for LW version
7111	5322 130 42136	BC848C	
7122	5322 130 42136	BC848C	for LW version
7124	5322 130 42136	BC848C	for LW version

Note: Only the parts mentioned in this list are normal service spare parts.



TUNER 95 BOARD

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Component layout....................7D-2
Circuit diagram....................7D-3
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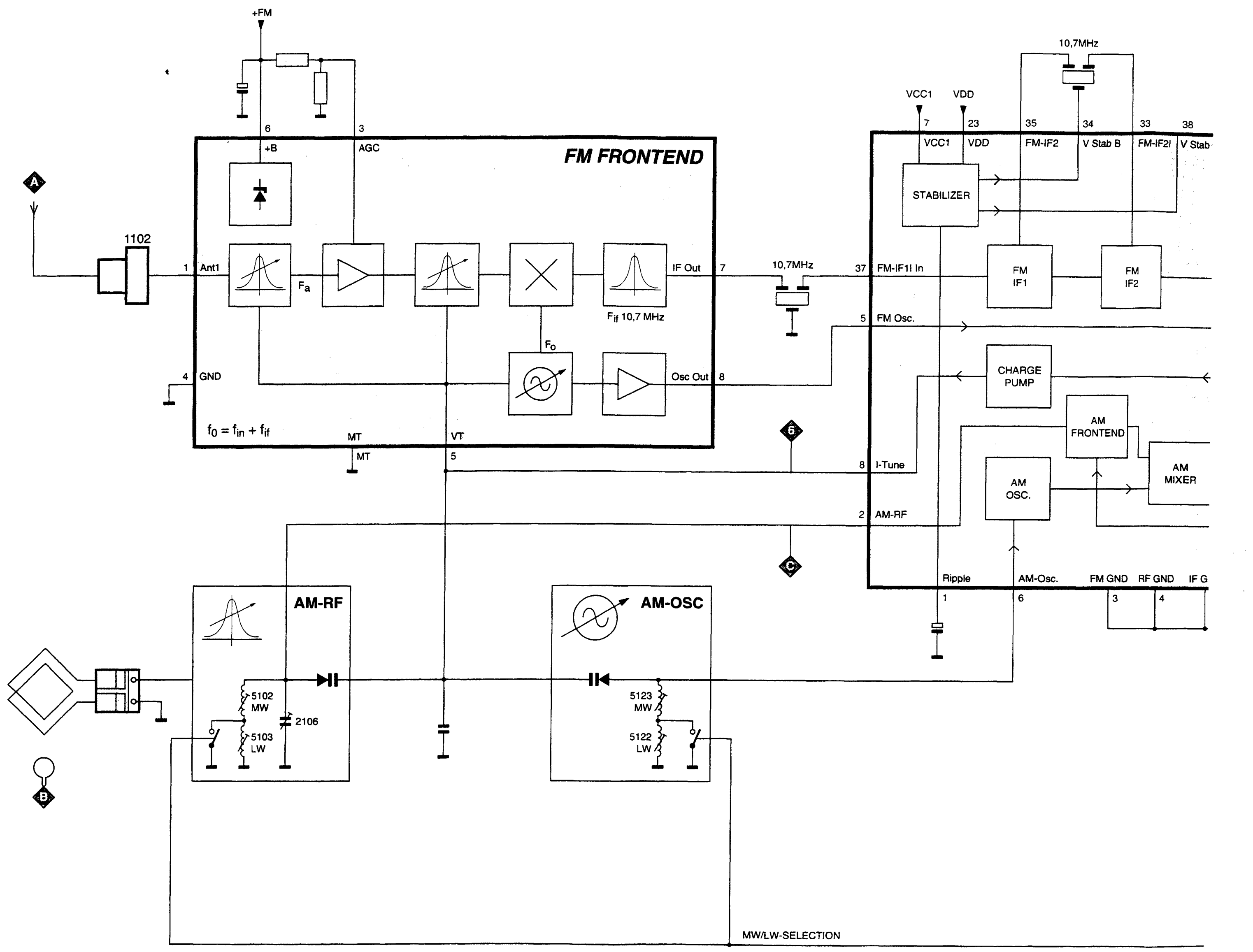
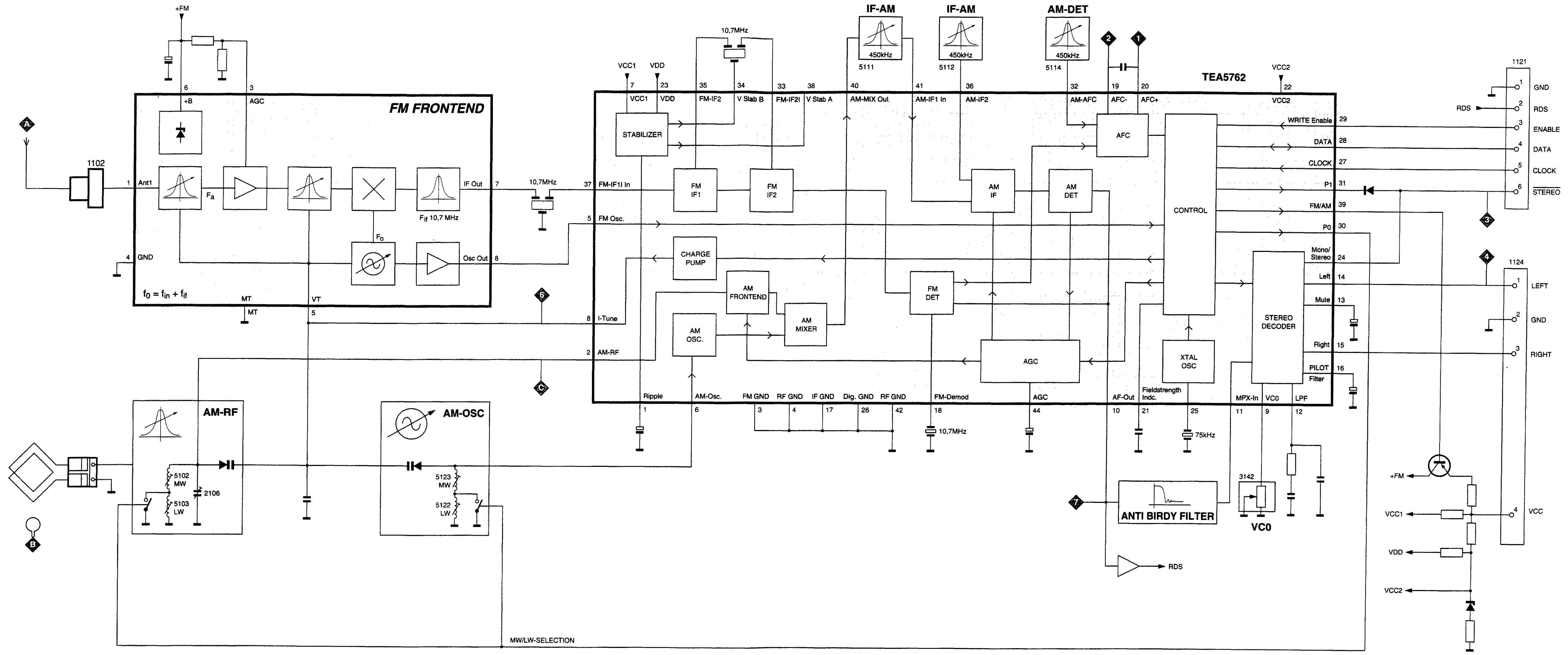
BLOCKDIAGRAM

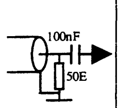


+FM
6
3
+B
AGC
FM FRONTEND
A
1102
1
Ant1
Fa
IF Out
7
Fif 10,7 MHz
Fo
4
GND
Osc Out
8
f0 = fin + fif
MT
MT
VT
5
10,7MHz
6
C
VCC1
VDD
10,7MHz
7
23
35
34
33
38
VCC1
VDD
FM-IF2
V Stab B
FM-IF2I
V Stab
STABILIZER
37
FM-IF1I In
FM IF1
FM IF2
5
FM Osc.
CHARGE PUMP
AM FRONTEND
8
I-Tune
AM MIXER
AM OSC.
2
AM-RF
Ripple
AM-Osc.
FM GND
RF GND
IF G
1
6
3
4
AM-RF
5102 MW
5103 LW
2106
AM-OSC
5123 MW
5122 LW
B
MW/LW-SELECTION

BLOCKDIAGRAM


+FM
FM FRONTEND
+B
AGC
6
3
1102
1
Ant1
Fa
IF Out
7
Fif 10,7 MHz
Fo
Osc Out
8
4
GND
f0 = fin + fif
MT
VT
5
10,7MHz
IF-AM
IF-AM
AM-DET
450kHz
5111
5112
5114
TEA5762
VCC1
VDD
VCC2
7
23
35
34
33
38
40
41
36
32
19
20
22
FM-IF2
V Stab B
FM-IF2I
V Stab A
AM-MIX Out
AM-IF1 In
AM-IF2
AM-AFC
AFC-
AFC+
STABILIZER
37
FM-IF1I In
FM IF1
FM IF2
AM IF
AM DET
AFC
CONTROL
FM Osc.
CHARGE PUMP
AM FRONTEND
AM MIXER
AM OSC.
FM DET
AGC
XTAL OSC
STEREO DECODER
I-Tune
AM-RF
Ripple
AM-Osc.
FM GND
RF GND
IF GND
Dig. GND
RF GND
FM-Demod
AGC
AF-Out
Fieldstrength Indc.
MPX-In
VCO
LPF
1
6
3
4
17
26
42
18
44
10
21
25
11
9
12
10,7MHz
75kHz
WRITE Enable
29
DATA
28
CLOCK
27
P1
31
FM/AM
39
P0
30
Mono/ Stereo
24
Left
14
Mute
13
Right
15
PILOT Filter
16
1121
GND
RDS
RDS
ENABLE
DATA
CLOCK
STEREO
1124
LEFT
GND
RIGHT
VCC
+FM
VCC1
VDD
VCC2
AM-RF
5102 MW
5103 LW
2106
AM-OSC
5123 MW
5122 LW
3142
ANTI BIRDY FILTER
VCO
RDS
MW/LW-SELECTION
A
B
C
1
2
3
4
6
7

TUNER 95 bis Adjustment Table (FM, MW, LW with Frame antenna)

Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
VARICAP ALIGNMENT						
FM (50)			108 MHz	check	◇6	7 ... 9V
87.5 - 108 MHz			87.5 MHz	check		1.3 ... 2V
MW (9)			1602 kHz	5123		8.3V ± 0.2V
531 - 1602 kHz			531 kHz	check		1V ± 0.4V
LW (3)			279 kHz	5122		8.3V ± 0.2V
153 - 279 kHz			153 kHz	check		1V ± 0.4V
FM – DETECTION						
FM	98 MHz 1mV continuous wave ***short pin 21 (IC7101) to ground***	◇A	98 MHz	5107	◇1 ◇2	0mV ± 3mV
FM – VCO						
FM	98 MHz 1 mV continuous wave	◇A	98 MHz	3142	◇3	152kHz ± 1 kHz
DISTORTION						
FM	98 MHz 1 mV 90 % L + 9 % pilot mod = 1kHz	◇A	98MHz	mixcoil inside Tuner 1110	◇4	Distortion minimum
AM – IF						
MW	450kHz Δf = 10kHz Low as possible Swept signal		MW	5111	◇7	symmetrical and max. height ↕
				5112		
	450kHz continuous wave	◇C		5114	◇1 ◇2	0mV ± 2mV
AM - RF						
MW	558kHz Mod = 1kHz 30 % AM 1494 kHz	◇B	558kHz	5102	◇7	MAX ↕
			1494kHz	2106		
LW	198kHz mod = 1kHz 30 % AM	*	198kHz	5103		MAX

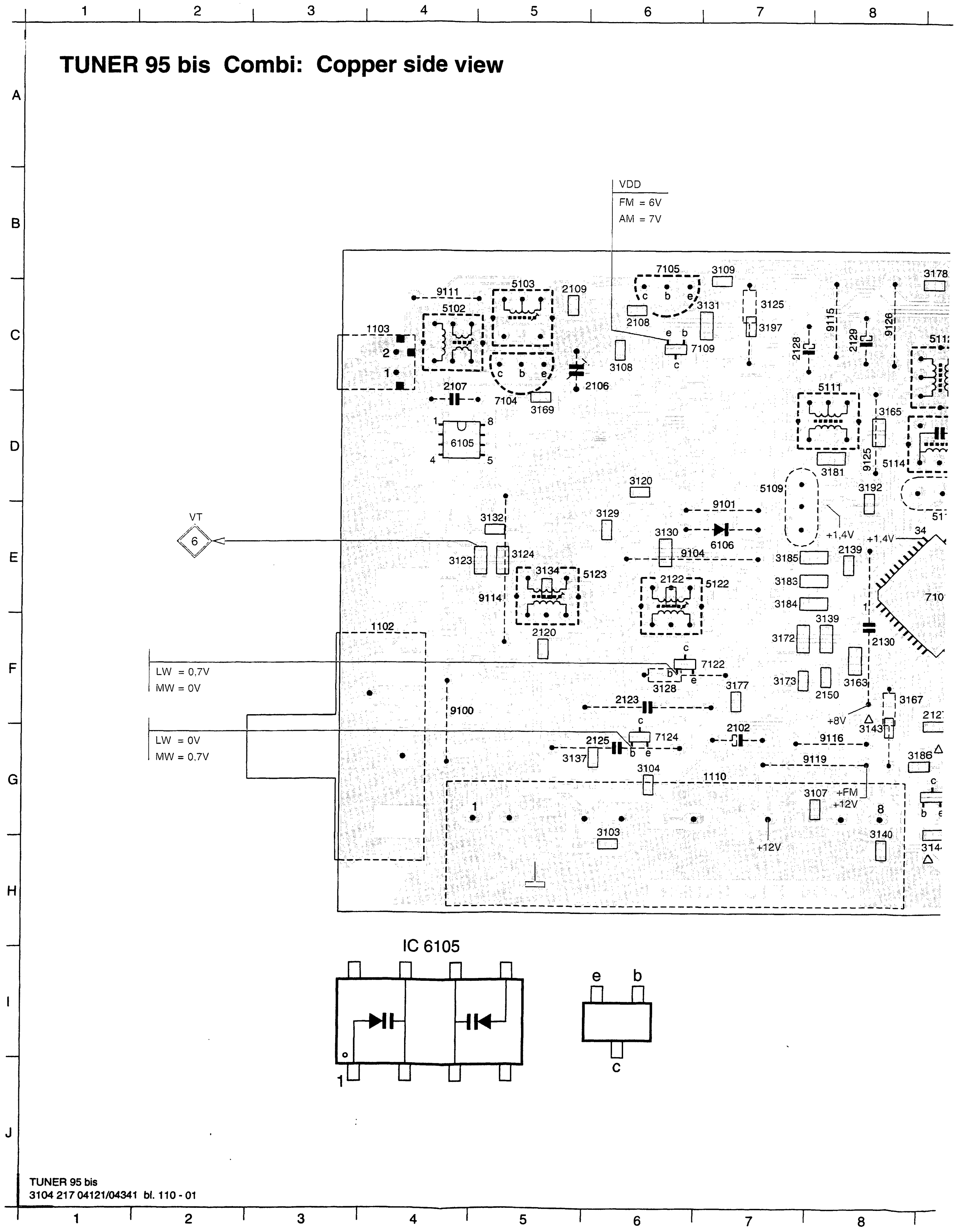
adjtable for 3104 217 04121/04341

* Signal send via a frame antenna
(..) = tuning grid in kHz

↕ repeat

1102	F4	2107	C4	2128	C7	2136	G10	2144	E10	2160	E9	3120	D6	3132	E5	3143	G8	3153	G9	3163	F8	3176	D9
1103	C4	2108	C6	2129	C8	2137	E11	2145	G11	2161	E9	3123	E4	3134	E5	3144	H9	3154	C10	3164	C11	3177	F7
1110	G7	2109	C5	2130	F8	2138	E10	2147	G11	2162	C11	3124	E5	3137	G5	3145	F9	3155	C10	3165	D8	3178	B8
1121	H11	2120	F5	2131	F9	2139	E8	2148	E9	3103	H6	3125	C7	3138	D9	3146	B10	3158	G11	3167	F8	3181	D8
1124	H9	2122	E6	2132	F9	2140	F10	2150	F8	3104	G6	3128	F6	3139	F8	3147	H9	3159	G11	3169	D5	3183	E7
1126	G10	2123	F6	2133	F10	2141	E10	2151	F9	3107	G7	3129	E6	3140	H8	3150	C11	3160	G11	3171	D11	3184	E7
2102	G7	2125	G6	2134	G10	2142	E9	2152	F9	3108	C6	3130	E6	3141	G9	3151	C10	3161	G11	3172	F7	3185	E7
2106	C5	2127	F9	2135	G11	2143	C10	2158	D10	3109	B7	3131	C6	3142	G10	3152	G9	3162	D9	3173	F7	3186	G

TUNER 95 bis Combi: Copper side view


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
VDD
FM = 6V
AM = 7V
VT
6
LW = 0,7V
MW = 0V
LW = 0V
MW = 0,7V
1102
1103
1110
6105
7104
7105
7109
7122
7124
5102
5103
5111
5114
5122
5123
2102
2106
2107
2108
2109
2120
2122
2123
2125
2128
2129
2130
2139
2150
3103
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3124
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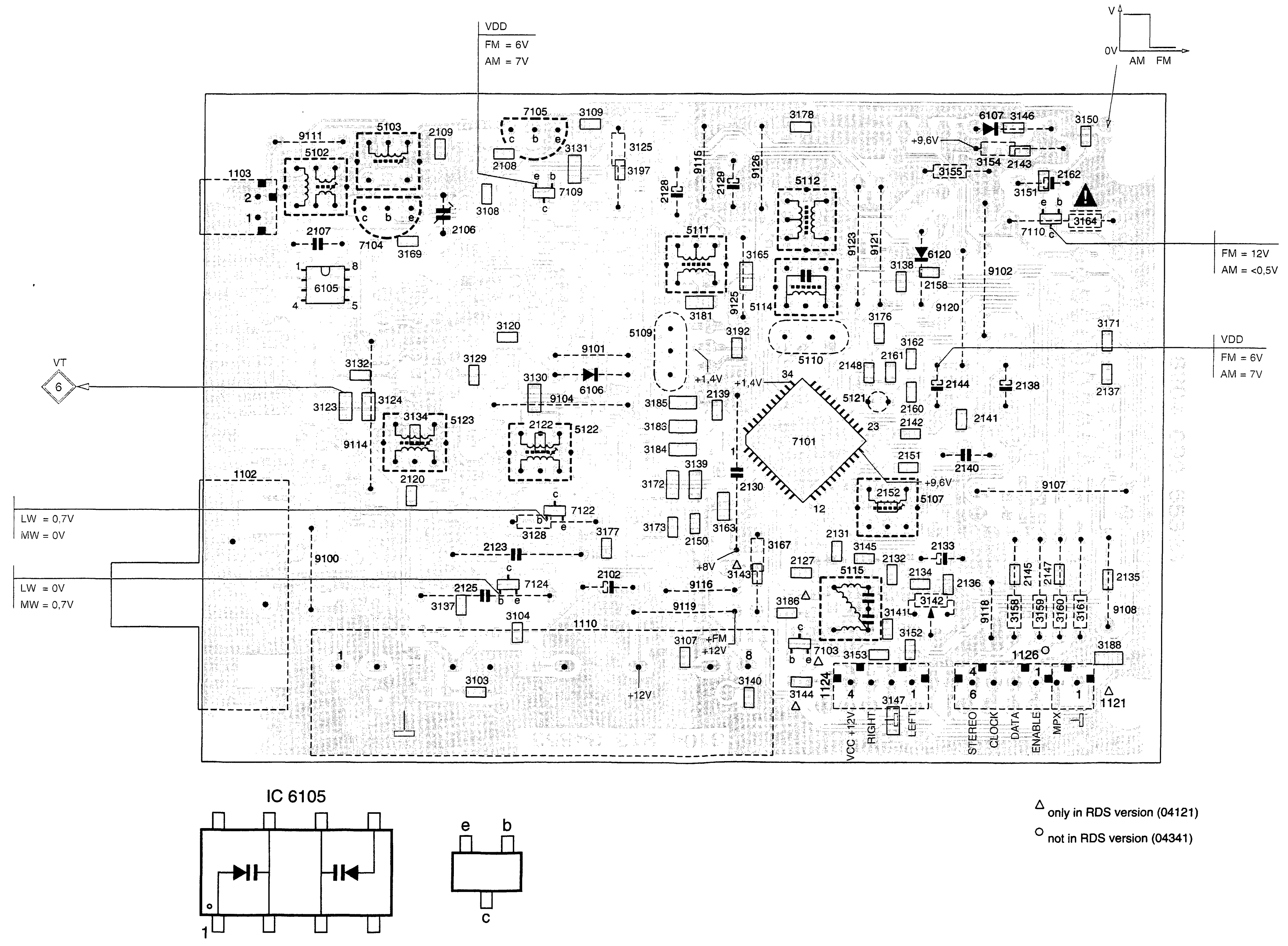
3143
3163
3165
3167
3169
3172
3173
3177
3178
3181
3183
3184
3185
3186
3192
3197
6106
9100
9101
9104
9111
9114
9115
9116
9119
9125
9126
5109
+1,4V
+8V
+12V
+FM
IC 6105
e
b
c
TUNER 95 bis
3104 217 04121/04341 bl. 110 - 01

1102	F4	2107	C4	2128	C7	2136	G10	2144	E10	2160	E9	3120	D6	3132	E5	3143	G8	3153	G9	3163	F8	3176	D9	3188	G11	5111	C8	6106	E7	7110	D11	9108	G11	9121	D9
1103	C4	2108	C6	2129	C8	2137	E11	2145	G11	2161	E9	3123	E4	3134	E5	3144	H9	3154	C10	3164	C11	3177	F7	3192	D8	5112	C9	6107	B10	7122	F7	9111	C4	9123	D9
1110	G7	2109	C5	2130	F8	2138	E10	2147	G11	2162	C11	3124	E5	3137	G5	3145	F9	3155	C10	3165	D8	3178	B8	3197	C7	5114	D8	6120	D10	7124	G6	9114	E5	9125	D8
1121	H11	2120	F5	2131	F9	2139	E8	2148	E9	3103	H6	3125	C7	3138	D9	3146	B10	3158	G11	3167	F8	3181	D8	5102	C4	5115	G9	7101	E9	9100	F4	9115	C8	9126	C8
1124	H9	2122	E6	2132	F9	2140	F10	2150	F8	3104	G6	3128	F6	3139	F8	3147	H9	3159	G11	3169	D5	3183	E7	5103	C5	5121	E9	7103	G9	9101	E7	9116	G8		
1126	G10	2123	F6	2133	F10	2141	E10	2151	F9	3107	G7	3129	E6	3140	H8	3150	C11	3160	G11	3171	D11	3184	E7	5107	F10	5122	E7	7104	D5	9102	D10	9118	G10		
2102	G7	2125	G6	2134	G10	2142	E9	2152	F9	3108	C6	3130	E6	3141	G9	3151	C10	3161	G11	3172	F7	3185	E7	5109	D7	5123	E5	7105	B6	9104	E6	9119	G7		
2106	C5	2127	F9	2135	G11	2143	C10	2158	D10	3109	B7	3131	C6	3142	G10	3152	G9	3162	D9	3173	F7	3186	G8	5110	E9	6105	D4	7109	C6	9107	F11	9120	D10		

TUNER 95 bis Combi: Copper side view



VDD
FM = 6V
AM = 7V
V
0V
AM FM
FM = 12V
AM = <0,5V
VDD
FM = 6V
AM = 7V
VT
6
LW = 0,7V
MW = 0V
LW = 0V
MW = 0,7V
+9,6V
+1,4V
+8V
+FM
+12V
VCC +12V
RIGHT
LEFT
STEREO
CLOCK
DATA
ENABLE
MPX
1103
1102
1110
1124
1126
1121
6105
7101
7103
7104
7105
7109
7110
7122
7124
6106
6107
6120
9100
9101
9102
9104
9107
9108
9111
9114
9116
9119
9120
IC 6105
1
e
b
c

△ only in RDS version (04121)

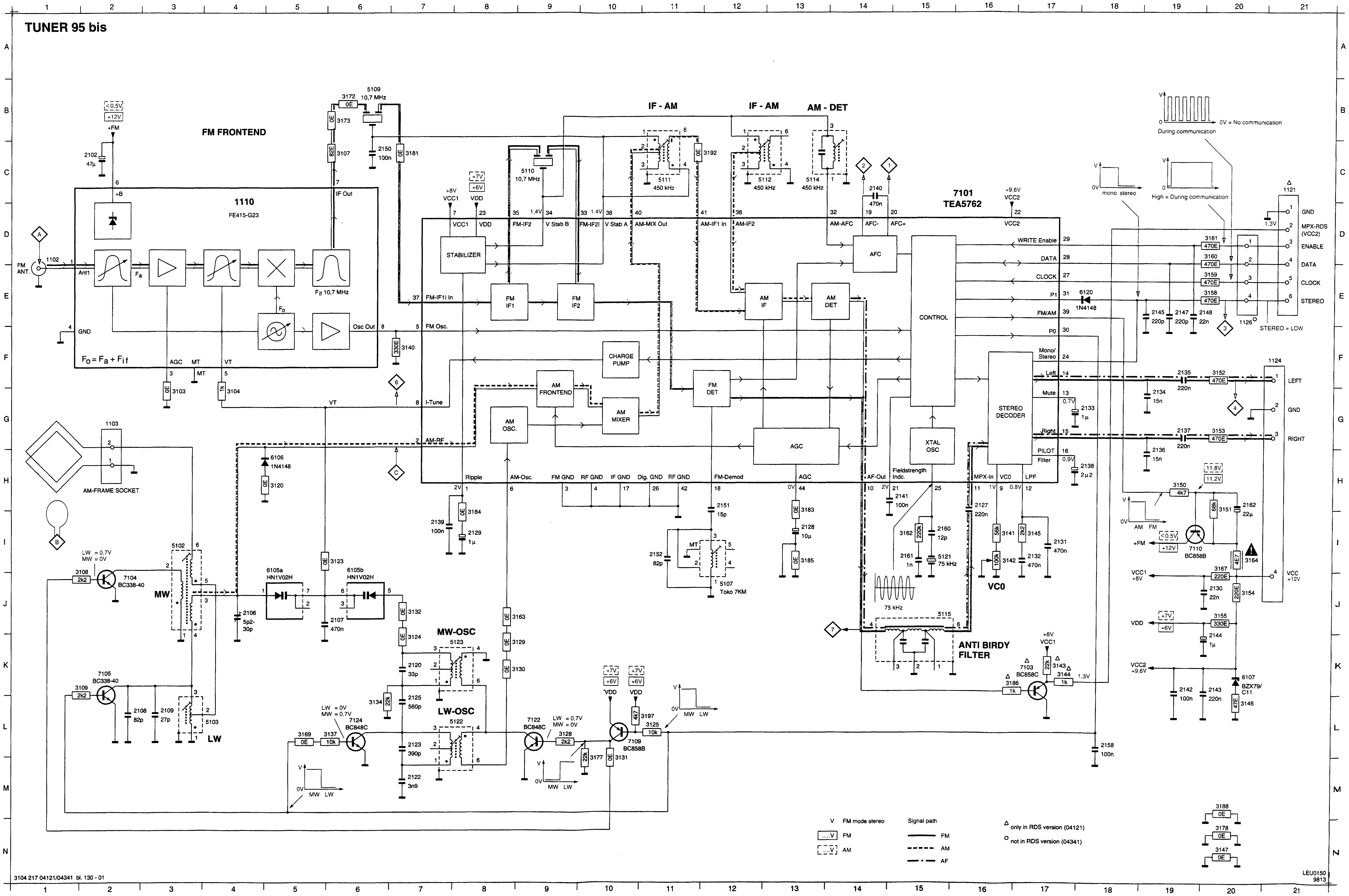
○ not in RDS version (04341)

TUNER 95 bis
3104 217 04121/04341 bl. 110 - 01

LEU0149
9813

1102	D1	1124	F21	2107	J6	2122	M7	2128	I13	2132	I17	2136	H19	2140	C14	2144	K20	2150	C6	2160	I15	3104	G4	3120	H5	3128	L9	3132	J7	3141	I16	3145	I17	3151	I20	3155	J20	3161	D19	3167	I20	3177	M10	3184	I8	3192	C12	5107	J12	5112	C12	5122	L7	6106	H5	7103	K17	7110	I19
1103	G2	1126	E20	2108	L2	2123	L7	2129	I8	2133	G18	2137	G19	2141	H15	2145	E19	2151	H12	2161	I15	3107	C6	3123	I6	3129	K8	3134	L6	3142	I16	3146	L20	3152	F20	3158	E19	3162	I15	3169	L5	3178	N20	3185	I13	3197	L11	5109	B6	5114	C13	5123	K7	6107	K20	7104	J2	7122	L9
1110	D4	2102	C2	2109	L3	2125	L7	2130	J20	2134	G19	2138	H18	2142	K19	2147	E19	2152	I11	2162	H20	3108	J1	3124	K7	3130	K8	3137	L5	3143	K17	3147	N20	3153	G20	3159	E19	3163	J8	3172	B6	3181	C7	3186	K16	5102	I3	5110	C9	5115	J15	6105a	I5	6120	E17	7105	K2	7124	L6
1121	C21	2106	J4	2120	K7	2127	H16	2131	I17	2135	F19	2139	I7	2143	K20	2148	E19	2158	L18	3103	G3	3109	K1	3125	L11	3131	M10	3140	F7	3144	K17	3150	H19	3154	J20	3160	D19	3164	I20	3173	B6	3183	I13	3188	M20	5103	L4	5111	C11	5121	I15	6105b	I6	7101	C15	7109	L10		

TUNER 95 bis



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
A
B
C
D
E
F
G
H
I
J
K
L
M
N
FM FRONTEND
FM ANT.
1102
Ant1
1110
FE415-G23
+B
Fa
Fif 10,7 MHz
Fo
IF Out
Osc Out
GND
Fo = Fa + Fif
AGC
MT
VT
2102
47µ
+FM
<0.5V
+12V
3103
3104
3140
330E
3172
0E
5109
10,7 MHz
3173
3107
82E
2150
100n
3181
1103
AM-FRAME SOCKET
IF - AM
IF - AM
AM - DET
5110
10,7 MHz
5111
450 kHz
5112
450 kHz
5114
450 kHz
3192
2140
470n
7101
TEA5762
VCC1
VDD
+8V
+7V
+6V
+9.6V
VCC2
STABILIZER
FM-IF2
V Stab B
FM-IF2I
V Stab A
AM-MIX Out
AM-IF1 In
AM-IF2
AM-AFC
AFC-
AFC+
FM-IF1I In
FM Osc.
I-Tune
AM-RF
FM IF1
FM IF2
CHARGE PUMP
AM FRONTEND
AM MIXER
AM OSC.
FM DET
AM IF
AM DET
AFC
AGC
CONTROL
STEREO DECODER
XTAL OSC
WRITE Enable
DATA
CLOCK
P1
FM/AM
P0
Mono/ Stereo
Left
Mute
Right
PILOT
Filter
Ripple
AM-Osc.
FM GND
RF GND
IF GND
Dig. GND
RF GND
FM-Demod
AGC
AF-Out
Fieldstrength Indc.
MPX-In
VCO
LPF
6120
1N4148
2145
220p
2147
220p
2148
22n
3161
3160
3159
3158
470E
1121
GND
MPX-RDS (VCC2)
ENABLE
DATA
CLOCK
STEREO
1126
STEREO = LOW
0V = No communication
During communication
High = During communication
mono stereo
1124
LEFT
GND
RIGHT
VCC +12V
2135
220n
3152
2134
15n
2137
220n
3153
2136
15n
2133
1µ
2138
2µ2
3150
4k7
11.8V
11.2V
3151
68k
2162
22µ
7110
BC858B
3164
4E7
3167
220E
2130
22n
3154
220E
3155
330E
2144
1µ
6107
BZX79/C11
3146
47E
2142
100n
2143
220n
VCC1 +8V
VDD
VCC2 +9.6V
AM FM
6106
1N4148
3120
3184
2139
100n
2129
1µ
VT
3123
2107
470n
6105a
HN1V02H
6105b
HN1V02H
2106
5p2-30p
5102
MW
LW = 0,7V
MW = 0V
3108
2k2
7104
BC338-40
7105
BC338-40
3109
2k2
2108
82p
2109
27p
5103
LW
3132
3124
MW-OSC
5123
2120
33p
3134
22k
2125
560p
LW-OSC
5122
2123
390p
2122
3n9
3163
3129
3130
7124
BC848C
3169
0E
3137
10k
7122
BC848C
3128
2k2
3177
22k
3131
7109
BC858B
3197
4k7
3125
10k
MW LW
2151
15p
2152
82p
5107
Toko 7KM
3183
2128
10µ
3185
2141
100n
3162
220k
2160
12p
2161
1n
5121
75 kHz
75 kHz
2127
220n
3141
56k
3142
100k
3145
2k2
2132
470n
2131
470n
VCO
5115
ANTI BIRDY FILTER
7103
BC858C
3186
1k
3143
22k
3144
1k
1.3V
2158
100n
V FM mode stereo
FM
AM
Signal path
FM
AM
AF
only in RDS version (04121)
not in RDS version (04341)
3188
3178
3147
0E

MISCELLANEOUS

1102	4822 267 10283	Socket Coaxial IEC 75R
1103	4822 265 31184	JST Connector 2 pin
1110	4822 210 10739	Frontend Assembly FE415-G23

CAPACITORS

2102	4822 124 40433	47µF 20% 25V
2106	4822 125 60102	Trimmer 5,2-30pF 100V
2107	4822 121 51252	470nF 5% 63V
2108	4822 126 13695	82pF 1% 63V
2109	4822 126 13691	27pF 1% 63V
2120	5322 122 32659	33pF 5% 50V
2122	5322 126 10465	3,9nF 10% 50V
2123	4822 121 10766	390pF 1% 630V
2125	4822 121 10578	560pF 1% 630V
2127	4822 122 32927	220nF +80/-20% 50V
2128	4822 124 41579	10µF 20% 50V
2129	4822 124 40242	1µF 20% 63V
2130	4822 126 11585	22nF +80/-20% 25V
2131	4822 122 33325	470nF 16V
2132	4822 122 33325	470nF 16V
2133	4822 124 40242	1µF 20% 63V
2134	4822 126 13188	15nF 5% 63V
2135	4822 122 32927	220nF +80/-20% 50V
2136	4822 126 13188	15nF 5% 63V
2137	4822 122 32927	220nF +80/-20% 50V
2138	4822 124 41576	2,2µF 20% 50V
2139	4822 126 10002	100nF 20% 25V
2140	4822 121 51252	470nF 5% 63V
2141	4822 122 31947	100nF 20% 63V
2142	4822 122 31947	100nF 20% 63V
2143	4822 122 32927	220nF +80/-20% 50V
2144	4822 124 40242	1µF 20% 63V
2145	4822 122 33575	220pF 5% 50V
2147	4822 122 33575	220pF 5% 50V
2148	4822 122 33809	22nF 20% 50V
2150	4822 122 31947	100nF 20% 63V
2151	4822 126 14236	15pF 5% 50V
2152	4822 126 13695	82pF 1% 63V
2158	4822 122 31947	100nF 20% 63V
2160	4822 122 32139	12pF 2% 63V
2161	5322 122 34123	1nF 10% 50V
2162	4822 124 81151	22µF 50V

RESISTORS

3103	4822 051 20008	0R Jumper 0805
3104	4822 051 10102	1k 2% 0,25W
3107	4822 051 20829	82R 5% 0,1W
3108	4822 117 11449	2k2 1% 0,1W
3109	4822 117 11449	2k2 1% 0,1W
3120	4822 051 20008	0R Jumper 0805
3123	4822 051 10008	0R Jumper 1206
3124	4822 051 10008	0R Jumper 1206
3125	4822 116 83864	10k 5% 0,5W
3128	4822 116 52256	2k2 5% 0,5W
3129	4822 051 20008	0R Jumper 0805
3130	4822 051 10008	0R Jumper 1206
3131	4822 051 10008	0R Jumper 1206
3132	4822 051 20008	0R Jumper 0805
3134	4822 051 20223	22k 5% 0,1W
3137	4822 117 10833	10k 1% 0,1W
3138	4822 051 20008	0R Jumper 0805
3139	4822 051 10008	0R Jumper 1206
3140	4822 051 20331	330R 5% 0,1W
3141	4822 117 11148	56k 1% 0,1W
3142	4822 100 11163	Trimmer 100k 30% 0,1W
3143	4822 051 20223	22k 5% 0,1W
3144	4822 051 10102	1k 2% 0,25W
3145	4822 117 11449	2k2 1% 0,1W
3146	4822 051 20479	47R 5% 0,1W
3147	4822 051 10008	0R Jumper 1206
3150	4822 051 20472	4k7 5% 0,1W
3151	4822 051 20683	68k 5% 0,1W
3152	4822 051 20471	470R 5% 0,1W
3153	4822 051 20471	470R 5% 0,1W
3154	4822 116 83872	220R 5% 0,5W
3155	4822 116 52219	330R 5% 0,5W
3158	4822 116 83883	470R 5% 0,5W
3159	4822 116 83883	470R 5% 0,5W
3160	4822 116 83883	470R 5% 0,5W
3161	4822 116 83883	470R 5% 0,5W
3162	4822 117 13579	220k 1% 0,1W
3163	4822 051 10008	0R Jumper 1206
3164	4822 052 10478	⚠ 4R7 5% 0,33W
3165	4822 051 10008	0R Jumper 1206
3167	4822 116 83872	220R 5% 0,5W
3169	4822 051 20008	0R Jumper 0805
3171	4822 051 20008	0R Jumper 0805
3172	4822 051 10008	0R Jumper 1206
3173	4822 051 20008	0R Jumper 0805
3176	4822 051 20008	0R Jumper 0805
3177	4822 051 20223	22k 5% 0,1W
3178	4822 051 10008	0R Jumper 1206
3181	4822 051 10008	0R Jumper 1206
3183	4822 051 10008	0R Jumper 1206
3184	4822 051 10008	0R Jumper 1206
3185	4822 051 10008	0R Jumper 1206
3186	4822 051 10102	1k 2% 0,25W
3188	4822 051 10008	0R Jumper 1206
3192	4822 051 20008	0R Jumper 0805
3197	4822 051 20472	4k7 5% 0,1W

COILS & FILTERS

5102	4822 157 71634	MW Aerial
5103	4822 157 71635	LW Aerial
5107	4822 157 11443	FM Discriminator 10,7MHz
5109	4822 157 71639	Ceram Filter 10,7MHz
5110	4822 242 70665	Ceram Filter 10,7MHz
5111	4822 158 60511	AM-IF Filter 450kHz
5112	4822 157 70302	AM-IF Filter 450kHz
5114	4822 157 70302	AM_IF Filter 450kHz
5115	4822 157 71636	Anti-Birdy Filter
5121	4822 242 10261	X'tal Resonator 75kHZ
5122	4822 157 60517	RF Coil AM
5123	4822 157 60517	RF Coil AM

DIODES

6105	4822 130 83075	HN1V02H-B
6106	4822 130 30621	1N4148
6107	4822 130 34488	BZX79-C11
6120	4822 130 30621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7101	4822 209 90315	TEA5762H/V1
7103	4822 130 42513	BC858C
7104	5322 130 44779	BC338-40
7105	5322 130 44779	BC338-40
7109	5322 130 41983	BC858B
7110	5322 130 41983	BC858B
7122	5322 130 42136	BC848C
7124	5322 130 42136	BC848C

Note : Only the parts mentioned in this list are normal service spare parts.

ETF7 TAPE MODULE

(Non-Dolby Version)

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Servo Circuit diagram 9-8
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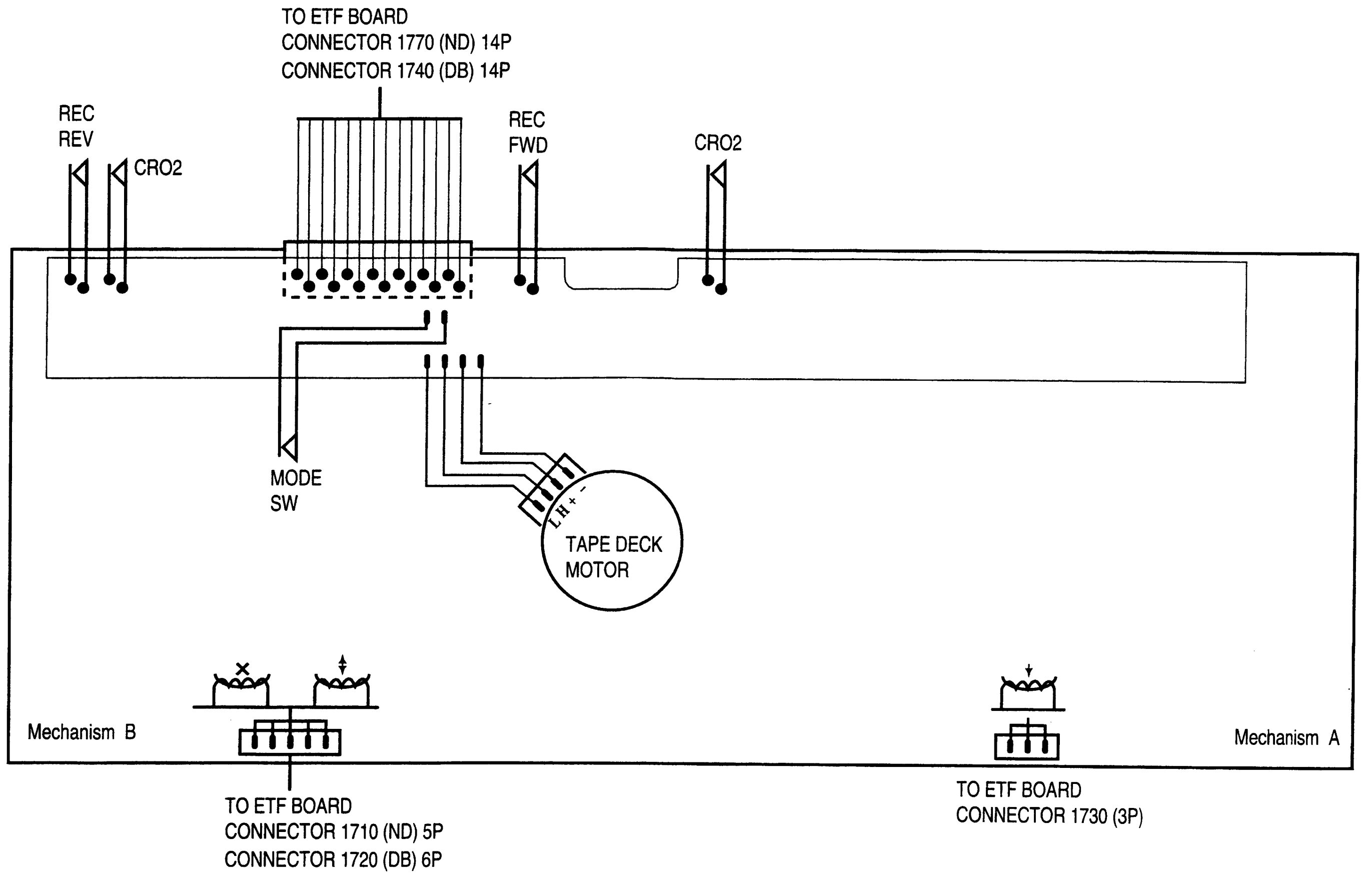
Electrical parts list.. 9-13

Tapedeck wiring (Double deck)


TO ETF BOARD
CONNECTOR 1770 (ND) 14P
CONNECTOR 1740 (DB) 14P
REC
REV
CRO2
REC
FWD
CRO2
MODE
SW
TAPE DECK
MOTOR
Mechanism B
Mechanism A
TO ETF BOARD
CONNECTOR 1710 (ND) 5P
CONNECTOR 1720 (DB) 6P
TO ETF BOARD
CONNECTOR 1730 (3P)

OPTIONS / VARIANTS TABLE

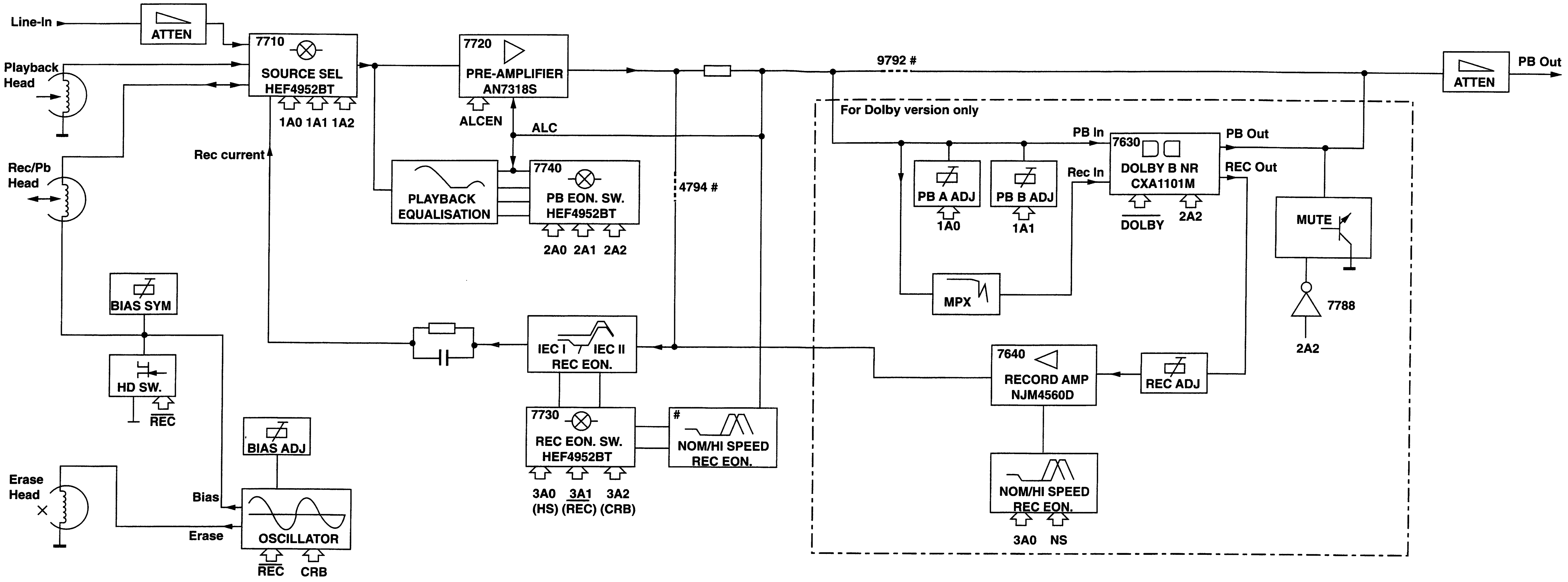
MODULE	**ETF7**		
VARIANT	**1**	**2**	**3**
FEATURES	**DB/DD/FR**	**ND/DD/FR**	**ND/DD/FF**
Deck configuration	double	double	double
Deck type (Tokyo Pigeon)	CWE	CWE	CWE
Autoreverse	yes (B)	yes (B)	no
Auto Replay	no	no	yes (A+B)
Motor configuration	single	single	single
Auto tape type selection	yes	yes	yes
Dolby type B Noise Reduction	yes	no	no
19 kHz pilot suppression	yes	no	no
Normal / High speed dubbing	yes	yes	no
Cue/Review & Fwd/Rewind	yes	yes	yes

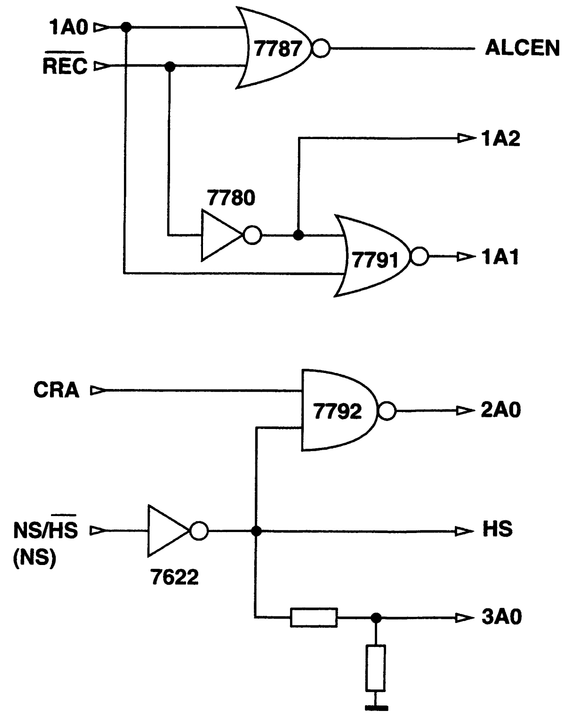
DB	=	Dolby B NR
DD	=	Double Deck
FF	=	Non-Autoreverse
FR	=	Autoreverse Deck B
ND	=	Non-Dolby
SD	=	Single Deck

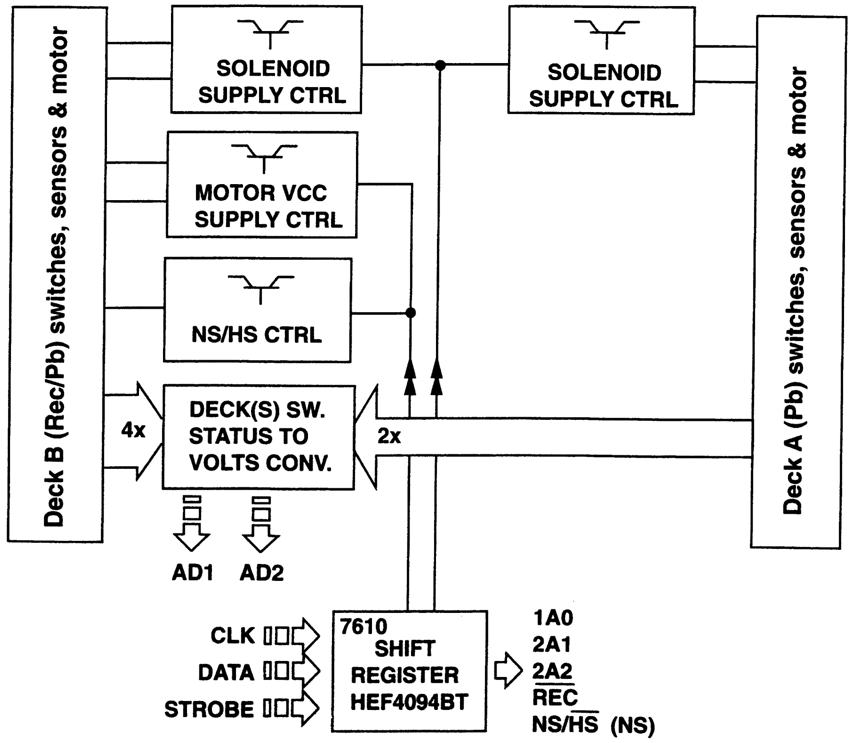
Variations table for Analog Circuit

	Autoreverse	Non-autoreverse
	ND/DD/FR	ND/DD/FF
2701 , 2702	150pF	270pF
2703 , 2704	100pF	220pF
2717 , 2718	10nF	15nF
2727 , 2728	470pF	1nF
3616	10k	1k
3618	6k8	-
3620	10k trimmer	-
3622	-	10k trimmer
3672	4k7	-
3676	47k	-
3688	680R	-
3723 , 3724	15k	18k
3727 , 3728	5k6	6k8
3729 , 3730	3k3	4k7
3743 , 3744	1k5	2k2
3745 , 3746	3k3	5k6
3754 , 3755	1M	47R
3769	12k	8k2
3772	6k8	5k6
3774	15k	8k2
6614	1N4148	-
7616	BC857B	-
7622	BC847B	-

BLOCK DIAGRAM


Line-In
ATTEN
Playback Head
Rec/Pb Head
Erase Head
7710
SOURCE SEL
HEF4952BT
1A0 1A1 1A2
Rec current
7720
PRE-AMPLIFIER
AN7318S
ALCEN
ALC
7740
PB EON. SW.
HEF4952BT
2A0 2A1 2A2
PLAYBACK EQUALISATION
4794 #
9792 #
ATTEN
PB Out
For Dolby version only
PB In
7630
DOLBY B NR
CXA1101M
DOLBY
2A2
PB Out
REC Out
Rec In
PB A ADJ
1A0
PB B ADJ
1A1
MPX
MUTE
7788
2A2
7640
RECORD AMP
NJM4560D
REC ADJ
NOM/HI SPEED
REC EON.
3A0 NS
BIAS SYM
HD SW.
REC
BIAS ADJ
Bias
Erase
OSCILLATOR
REC CRB
IEC I IEC II
REC EON.
7730
REC EON. SW.
HEF4952BT
3A0 3A1 3A2
(HS) (REC) (CRB)
#
NOM/HI SPEED
REC EON.


1A0
REC
7787
ALCEN
1A2
7780
7791
1A1
CRA
7792
2A0
NS/HS
(NS)
7622
HS
3A0


Deck B (Rec/Pb) switches, sensors & motor
SOLENOID SUPPLY CTRL
MOTOR VCC SUPPLY CTRL
NS/HS CTRL
4x
DECK(S) SW. STATUS TO VOLTS CONV.
2x
AD1 AD2
SOLENOID SUPPLY CTRL
Deck A (Pb) switches, sensors & motor
CLK
DATA
STROBE
7610
SHIFT REGISTER
HEF4094BT
1A0
2A1
2A2
REC
NS/HS (NS)

NOTE: # For Non-dolby version only
Only 1 channel is presented.

▯▯⇨ MicroProcessor Control / Communication lines

⇨ Direct / Indirect Control lines from Shift Registers

Brief introduction

General

1. Playback Mode
   Signal from the playback head Deck A or Deck B is selected and fed through by the Mode Selector IC7710 (HEF4952BT). The signal is amplified by amplifier IC7720 (AN7323S) before feeding to the IC7740 (HEF4952BT) and out to the AF Board via connector 1701.

2. Recording Mode
   Recording Signal is selected and fed through by the Mode Selector IC7710 (HEF4952BT) which is then amplified by the amplifier IC7720 (AN7323S). The amplified output signal will pass through IC7730 (HEF4952BT) for record equalization and back to IC7710 (HEF4952BT) before registered into the Rec/PB Head of Deck B.

3. Dubbing Mode
   In Dubbing mode, signal from the playback head Deck A is selected and fed through by the Mode Selector IC7710 (HEF4952BT) which is then equalised for playback mode by the amplifier IC7720 (AN7323S) so that a flat response is obtained after the pre-amp. The equalised signal will then follow the same path as in the Recording mode.

4. Mode Selector
   The Mode Selector IC7710 (HEF4952BT) caters for 4 inputs signal, namely Playback Signal from Deck A, Playback Signal from Deck B, Recording Signal and Dubbing Signal.

5. Amplifier PB/REC
   Amplifier IC7720 (AN7323S) is for the purpose of amplifying the Playback and Recording signal from the Mode Selector.

6. Automatic Level Control (ALC)
   ALC circuit consists of resistors (3760, 3765, 3766, 3767), capacitors (2762 , 2763) and control by transistor 7787 (BC847B). ALC limits the amplifier output to a constant value when input signal becomes too large, thus limiting recording current to below saturation level, to prevent recording distortion.

7. Muting Circuit (For Non-Dolby version only)
   Switch S4 of the IC7740 (HEF4952BT) is for the purpose of muting the output during Recording mode. During Recording mode, S4 is closed and shorted to the ground.

8. IC7740 (HEF4952BT)
   The function of the IC7740 (HEF4952BT) is to change time constant between 120us Ferro (IEC I) and 70us Chrome (IEC II) during playback mode. It will automatically determined whether the tape type is 120us Ferro (IEC I) or 70us Chrome (IEC II). This IC will switch to Flat Gain during the Recording mode.

9. IC7730 (HEF4952BT)
   The function of the IC7730 (HEF4952BT) is to change gain and time constant according to tape type and recording speed to boost recording current at higher frequency during recording to compensate for head loss. It will automatically determined whether the tape type is 120us Ferro (IEC I) or 70us Chrome (IEC II).

10. Bias Level
    Bias Level making use of the Variable resistor (3773) for adjusting the optimal level of the bias current for Ferro or Chrome.

11. Bias Symm (For Dolby B NR version only)
    Bias Symm making use of the Variable resistor (3785) to adjust the bias current for the left and the right channel to be equal.

12. PB Switch
    Playback Switch which consists of the FETs 7785 (For Dolby B NR version only) & 7786 (J111) is for the purpose of providing a virtual ground for the Rec/PB Head (Deck B) during Playback mode. During the Playback mode, the FETs are turn on and shorted pin 2 and 4 of connector 1720 to the ground. During Recording mode, the FETs are turn off to allow the oscillator signal to be superposition onto the Recording signal for recording.

13. Motor Speed (For FR versions only)
    During High speed dubbing, a feedback signal from the uP through pin 03 of the IC7610 (HEF4094BT) will trigger the transistors 7622 (BC847B) and 7616 (BC857B) to cause a change in the voltage level between High and Low, thus changing the speed of the motor.

14. IC7610 (HEF4094BT)
    IC7610 (HEF4094BT) is a Shift Register use for issues the logic for cmos switch ICs (HEF4952BT) via 1A0, 2A1 and 2A2. It also issues logic to On/Off SOL_A, SOL_B and MOT. Recording speed is controlled via NS/HS.

Dolby Circuit (For sets with Dolby B NR version only)

15. IC7630 (CXA1551M)
    IC7630 (CXA1551M) in the Dolby circuit is a Dolby Noise Reduction Type B IC for the Playback and Recording signal. Noise Reduction ON/OFF are controlled by $\overline{\text{DOLBY}}$, which is from CLK, direct from uP. After clocking in DATA, CLK is set to HIGH/LOW for NR OFF/ON.

16. 19kHz Filter
    The 19kHz filters 5631 & 5632 (LXD-210) in the Dolby circuit is for the purpose of filtering the 19kHz Pilot Tone (for Tuner signal only) of the Recording signal.

17. Level Adjust
    The Variable resistor 3635, 3636,3641 and 3642 in the Dolby circuit is for adjusting the playback level of the Dolby reference (400Hz , 200nWb/m). Transistor 7631, 7632 are ON to enable adjustment of 3641, 3642 during Playback Deck A. Transistor 7633, 7634 and 3635, 3636 are active for Playback Deck B.

18. Amplifier IC7640 (NJM4560M)
    The Amplifiers 7640A & 7640B (NJM4560M) in the Dolby circuit is for the purpose of amplified the Recording signal.

19. Muting Circuit
    The muting circuit which consists of transistors 7788, 7789 and 7790 (BC847B) is for the purpose of muting the output during Recording mode.

NOTATIONS & ABBREVIATIONS USED IN THIS DOCUMENT

CR	Chrome (IEC type II)
DB	Dolby NR type B
DD	Double Deck
DM	Double Motor
FE	Ferro (IEC type I)
FF	Non-Autoreverse
FR	Autoreverse Deck B
Gnd x	Ground x
HSD	High speed dubbing
ND	Non Dolby
NR	Noise Reduction
NSD	Normal speed dubbing
PB	Playback
REC	Record
S/A	Sub-assy
SD	Single Deck
SM	Single Motor

CONNECTORS ASSIGNMENTS:

CONNECTOR 1701		INTERCONNECTION TO AF BOARD
○ 1	REC-L	Record input left
○ 2	REC-R	Record input right
○ 3	GND A	AF Ground
○ 4	TAPE-L	Playback output left
○ 5	+12V	D.C. supply (+12V) for AF electronics
○ 6	TAPE-R	Playback output right
○ 7	-CMOS	Negative d.c. supply (-9V) for CMOS ICs

CONNECTOR 1703		INTERCONNECTION TO AF BOARD
○ 1	GND M	Motor Ground
○ 2	+MOTOR	D.C. supply (+12V) for tape deck motor & solenoid

CONNECTOR 1706		INTERCONNECTION TO FRONT BOARD
○ 1	AD2	Deck sensing switches output voltage / Deck A EOT
○ 2	AD1	Deck sensing switches output voltage / Deck B EOT
○ 3	+5V	DC supply +5V for ADC network
○ 4	GND P	Control & Oscillator Ground
○ 5	CLK	HEF4094BT shift register Clock line
○ 6	DATA	HEF4094BT shift register Data line
○ 7	STROBE	HEF4094BT shift register Strobe line

CONNECTOR 1710		DECK B HEADS CONNECTON ***(For Non-Dolby version only)***
○ 1	B R/P HD L+	R/P Head left channel positive
○ 2	GND A	R/P Head return ground
○ 3	B R/P HD R+	R/P Head right channel positive
○ 4	ERASE HEAD	Erase Head
○ 5	GND A	Erase Head ground

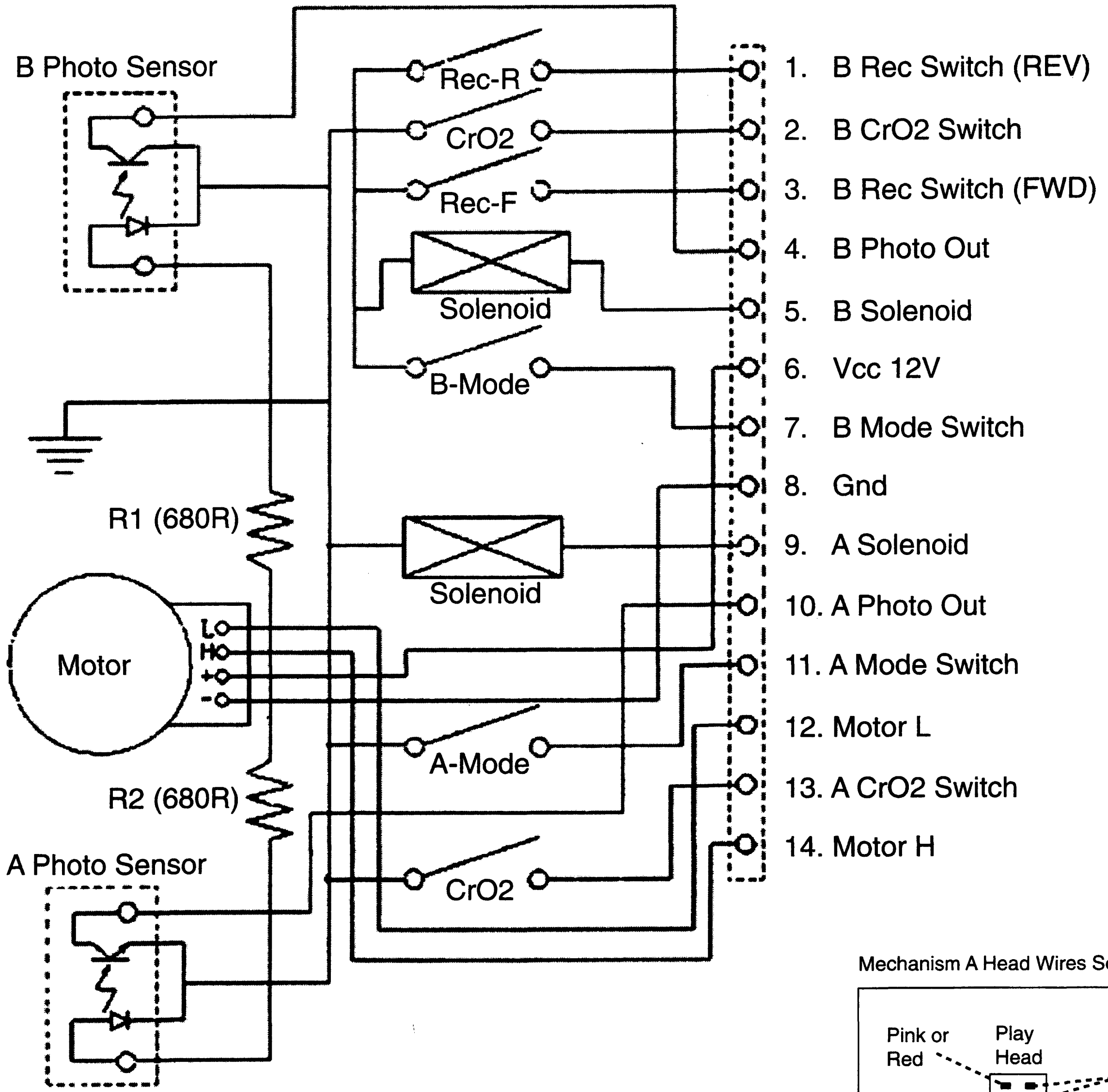
CONNECTOR 1720		DECK B HEADS CONNECTON ***(For Dolby B NR version only)***
○ 1	B R/P HD L+	R/P Head left channel positive
○ 2	B R/P HD L-	R/P Head left channel negative
○ 3	B R/P HD R+	R/P Head right channel positive
○ 4	B R/P HD R-	R/P Head right channel negative
○ 5	ERASE HEAD	Erase Head
○ 6	GND A	Erase Head ground

CONNECTOR 1730		DECK A HEAD CONNECTIONS ***(For Double Deck versions only)***
○ 1	A PB HD L+	Pb Head left channel positive
○ 2	GND A	Pb Head return ground shield
○ 3	A PB HD R+	Pb Head right channel positive

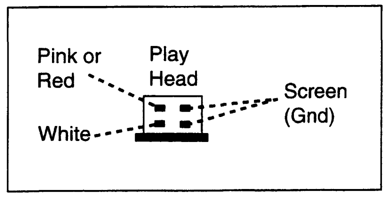
CONNECTOR 1740		DECK A & B CONTROL INTERFACE ***(For Dolby B NR version only)***	
○ 1	REC REW	Record tab protection status switch (reverse)	[open=on: close=off]
○ 2	CrO2 B	Chrome tape detection switch deck B	[open=Cr: close=Fe]
○ 3	REC FWD	Record tab protection status switch (forward)	[open=on: close=off]
○ 4	PHOTO B	Photo sensor output (tape movement indication)	
○ 5	SOL B	Solenoid supply for deck B	
○ 6	Vcc	Deck / Motor supply	
○ 7	MODE B	Mode switch (head engagement)	[open=off: close=engaged]
○ 8	GND M	Deck / Motor ground	
○ 9	SOL A	Solenoid supply for deck A	
○ 10	PHOTO A	Photo sensor output (tape movement indication)	
○ 11	MODE A	Mode switch (head engagement)	[open=off: close=engaged]
○ 12	L	L pin for motor	
○ 13	CrO2 A	Chrome tape detection switch deck A	[open=Cr: close=Fe]
○ 14	H	H pin for motor	

CONNECTOR 1770		DECK A & B CONTROL INTERFACE ***(For Non-Dolby version only)***	
○ 1	REC REW	Record tab protection status switch (reverse)	[open=on: close=off]
○ 2	CrO2 B	Chrome tape detection switch deck B	[open=Cr: close=Fe]
○ 3	REC FWD	Record tab protection status switch (forward)	[open=on: close=off]
○ 4	PHOTO B	Photo sensor output (tape movement indication)	
○ 5	SOL B	Solenoid supply for deck B	
○ 6	Vcc	Deck / Motor supply	
○ 7	MODE B	Mode switch (head engagement)	[open=off: close=engaged]
○ 8	GND M	Deck / Motor ground	
○ 9	SOL A	Solenoid supply for deck A	
○ 10	PHOTO A	Photo sensor output (tape movement indication)	
○ 11	MODE A	Mode switch (head engagement)	[open=off: close=engaged]
○ 12	L	L pin for motor	
○ 13	CrO2 A	Chrome tape detection switch deck A	[open=Cr: close=Fe]
○ 14	H	H pin for motor	

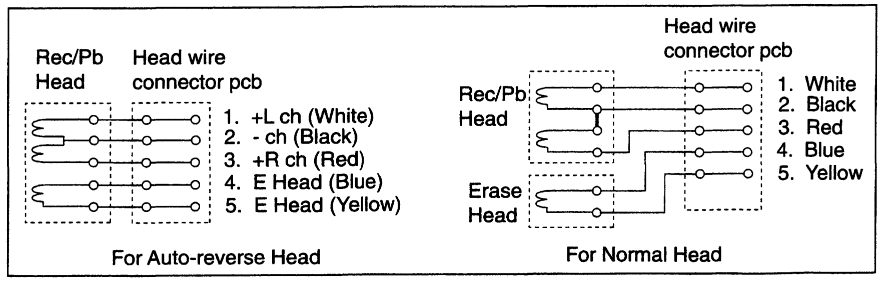
TAPE MECHANISM ELECTRONICS


B Photo Sensor
Rec-R
CrO2
Rec-F
Solenoid
B-Mode
R1 (680R)
Solenoid
Motor
L
H
+
-
A-Mode
R2 (680R)
A Photo Sensor
CrO2
1. B Rec Switch (REV)
2. B CrO2 Switch
3. B Rec Switch (FWD)
4. B Photo Out
5. B Solenoid
6. Vcc 12V
7. B Mode Switch
8. Gnd
9. A Solenoid
10. A Photo Out
11. A Mode Switch
12. Motor L
13. A CrO2 Switch
14. Motor H

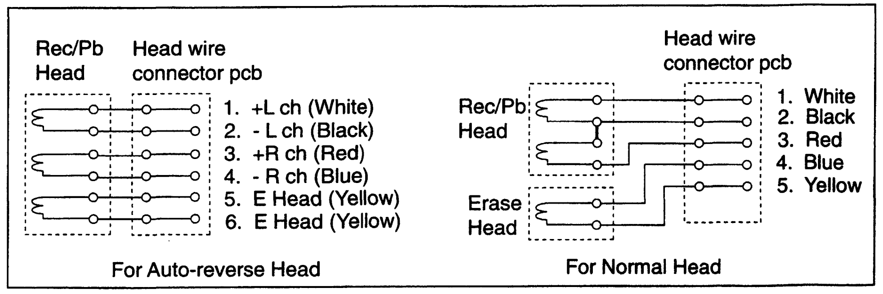
Mechanism A Head Wires Soldering


Pink or Red
Play Head
Screen (Gnd)
White

Mechanism B Head Wires Soldering (Non-Dolby version)


Rec/Pb Head
Head wire connector pcb
1. +L ch (White)
2. - ch (Black)
3. +R ch (Red)
4. E Head (Blue)
5. E Head (Yellow)
For Auto-reverse Head
Rec/Pb Head
Erase Head
Head wire connector pcb
1. White
2. Black
3. Red
4. Blue
5. Yellow
For Normal Head

Mechanism B Head Wires Soldering (Dolby B NR version)


Rec/Pb Head
Head wire connector pcb
1. +L ch (White)
2. - L ch (Black)
3. +R ch (Red)
4. - R ch (Blue)
5. E Head (Yellow)
6. E Head (Yellow)
For Auto-reverse Head
Rec/Pb Head
Erase Head
Head wire connector pcb
1. White
2. Black
3. Red
4. Blue
5. Yellow
For Normal Head

TAPE ADJUSTMENT & CHECK TABLE

	TEST CASSETTE	RECORDER MODE	MEASURE ON	READ ON	ADJUST	
					with	to
ADJUST MOTOR SPEED						
NORMAL SPEED	SBC420 3150Hz	PLAY B	◇1 or ◇2 LEFT RIGHT	frequency counter	3620	3150Hz ± 0.5%
		PLAY A			check	3150Hz -0.8/+1.8%
CHECK WOW & FLUTTER						
DECK A & B	SBC420 3150Hz	PLAY	◇1 or ◇2 LEFT RIGHT	W&F-meter	check	≤0.4 % DIN
ADJUST AZIMUTH						
DECK A & B	SBC420 10kHz	PLAY FWD	◇1 or ◇2 LEFT RIGHT	mV-meter	left hand screw	max. output level & left=right
		PLAY REV #			right hand screw	
CHECK PLAYBACK FREQUENCY RESPONSE						
DECK A & B	SBC420	PLAY	◇1 or ◇2 LEFT RIGHT	mV-meter	check	limits see fig.1
ADJUST BIAS CURRENT						
DECK B	SBC419A	RECORD	◇5 or ◇6 LEFT RIGHT	mV-meter	3773	995mV
	SBC420				check	750mV ± 1.5dB
CHECK OVERALL FREQUENCY RESPONSE AND DISTORTION						
Inject 3mV signals 100Hz, 250Hz, 1kHz, 10kHz, 12.5kHz via ◇3 or ◇4	SBC419A or SBC420	RECORD B				
	RECORDED CASSETTE	PLAY B	◇1 or ◇2 LEFT RIGHT	mV-meter	check	limits see fig. 2 *
Inject 1kHz 8.85mV via ◇3 or ◇4	SBC419A or SBC420	RECORD B				
	RECORDED CASSETTE	PLAY B	◇1 or ◇2 LEFT RIGHT	THD-meter	check	≤3% *

SBC419A : 4822 397 30069
SBC420 : 4822 397 30071

# For Auto-reverse version only
* If high frequencies are not within limits, decrease bias and re-measure. If distortion is too high, increase bias and re-meaure

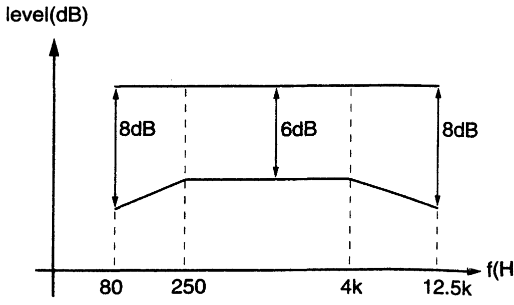


figure. 1

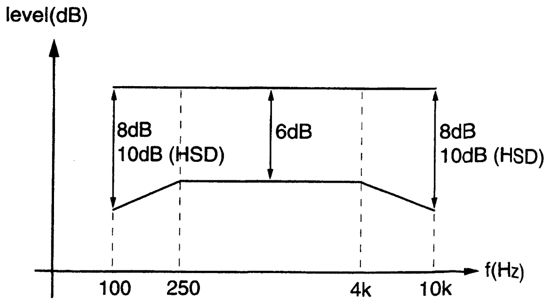
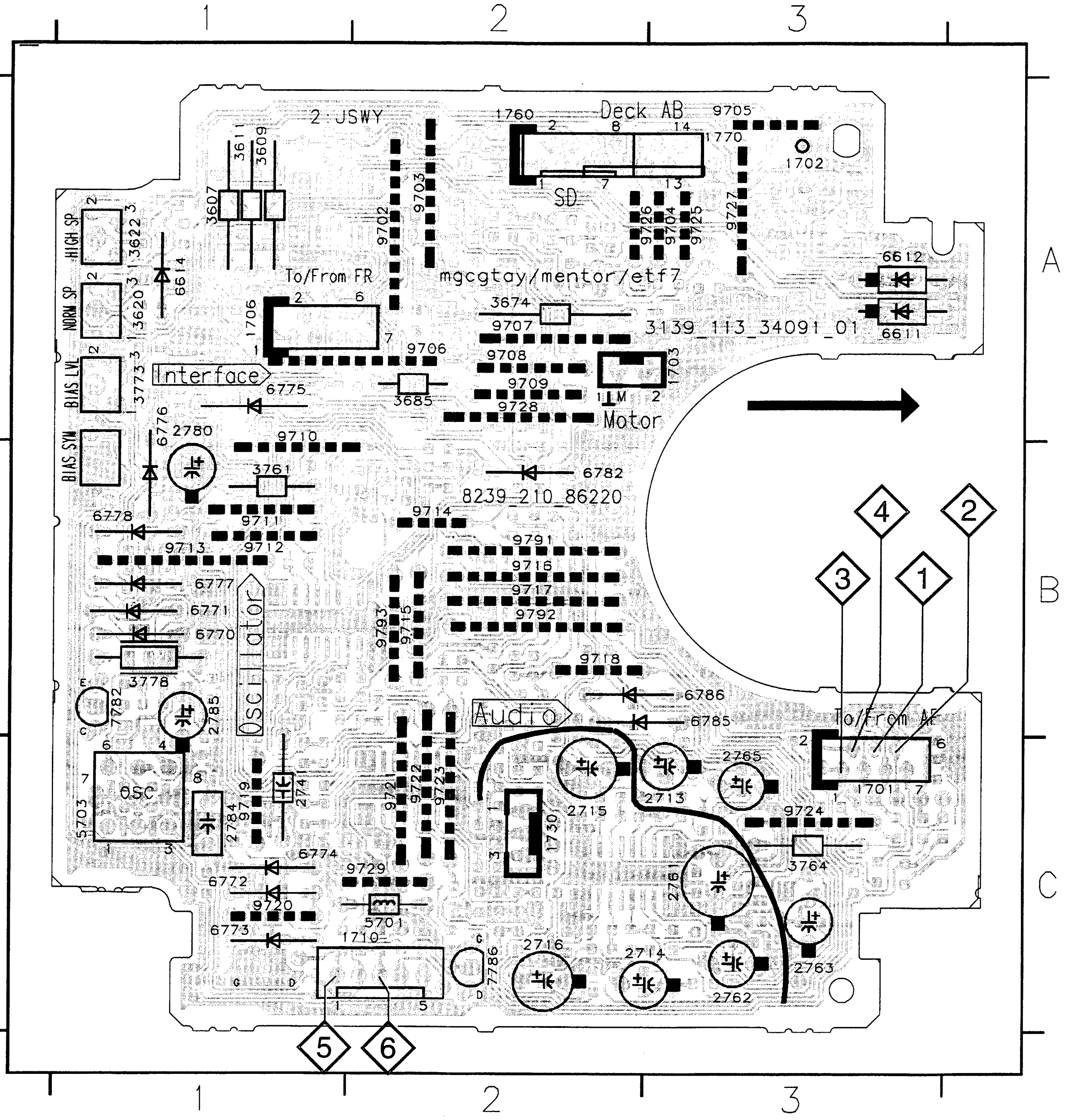


figure. 2

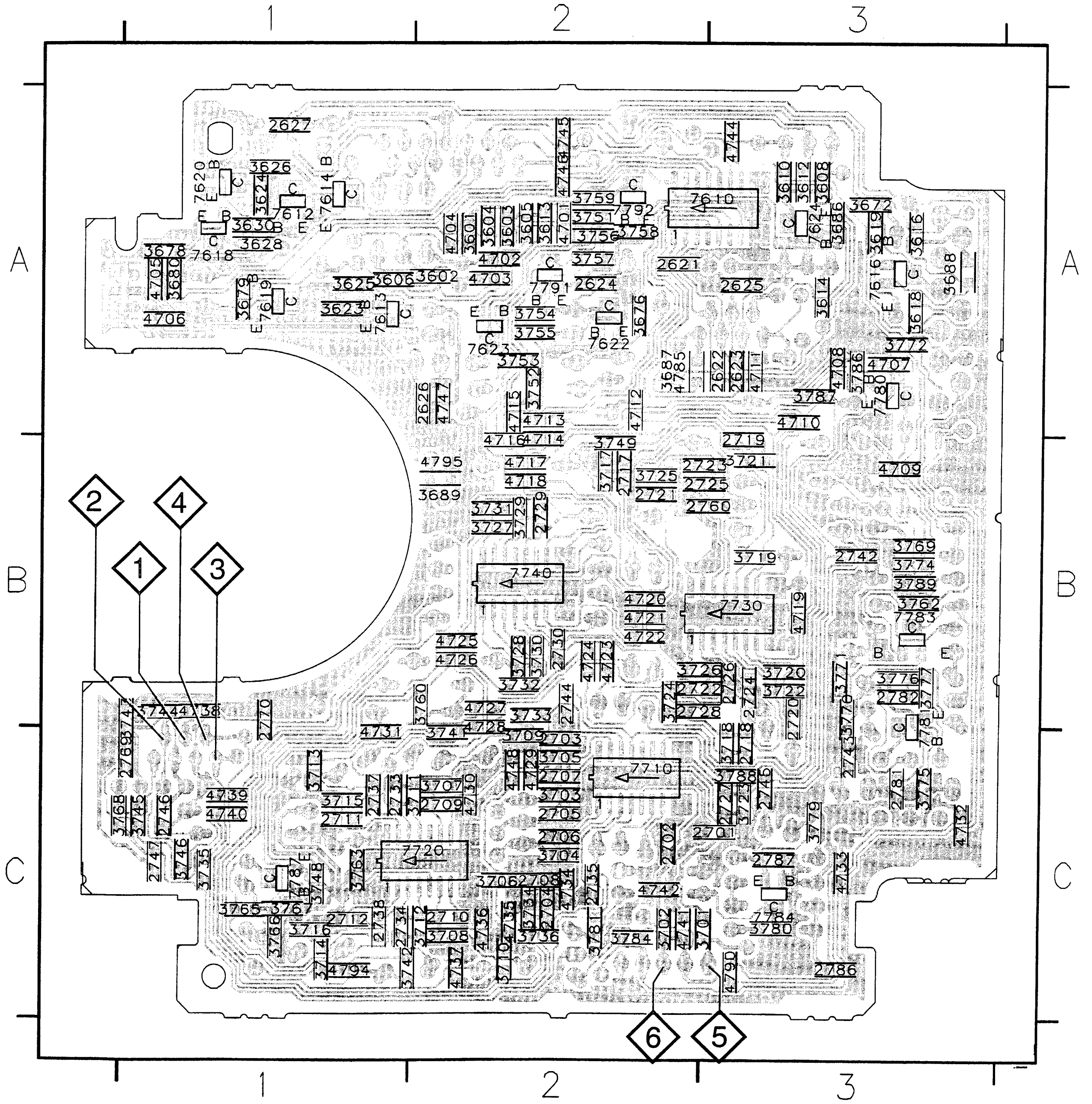
COMPONENT LAYOUT

1701	C3	2715	C2	3607	A1	3778	B1	6774	C1	9702	A2	9712	B1	9722	C2	9793	B2
1702	A3	2716	C2	3609	A1	5701	C2	6775	A1	9703	A2	9713	B1	9723	C2		
1703	A3	2741	C1	3611	A1	5703	C1	6776	A1	9704	A3	9714	B2	9724	C3		
1706	A1	2761	C3	3620	A1	6611	A3	6777	B1	9705	A3	9715	B2	9725	A3		
1710	C2	2762	C3	3622	A1	6612	A3	6778	B1	9706	A2	9716	B2	9726	A2		
1730	C2	2763	C3	3674	A2	6614	A1	6782	B2	9707	A2	9717	B2	9727	A3		
1760	A2	2765	C3	3685	A2	6770	B1	6785	B3	9708	A2	9718	B2	9728	A2		
1770	A3	2780	A1	3761	B1	6771	B1	6786	B3	9709	A2	9719	C1	9729	C2		
2713	C3	2784	C1	3764	C3	6772	C1	7782	B1	9710	A1	9720	C1	9791	B2		
2714	C3	2785	B1	3773	A1	6773	C1	7786	C2	9711	B1	9721	C2	9792	B2		


1
2
3
A
B
C
2 JSWY
1760
Deck AB
9705
1770
1702
SD
3611
3609
3607
HIGH SP
3622
6614
NORM SP
3620
BIAS LVL
3773
BIAS SYM
To/From FR
1706
mgcgtay/mentor/etf7
3674
9707
9706
3139 113 34091 01
1703
Interface
6775
3685
9708
9709
9728
Motor
6776
2780
9710
3761
6782
8239 210 86220
6778
9711
9714
9713
9712
9791
9716
9717
9792
6777
6771
6770
Oscillator
9793
9715
3778
9718
6786
6785
Audio
7782
2785
To/From AF
1701
OSC
5703
2784
9719
2741
9721
9722
9723
1730
2715
2713
2765
9724
3764
6774
6772
9720
9729
5701
6773
1710
7786
2716
2714
2762
2781
2763
6611
6612
9702
9703
9726
9704
9725
9727

CHIP LAYOUT

2621	A2	2724	B3	3602	A2	3688	A3	3725	B2	3757	A2	4701	A2	4727	B2	7612	A1
2622	A3	2725	B3	3603	A2	3689	B2	3726	B2	3758	A2	4702	A2	4728	C2	7613	A1
2623	A3	2726	B3	3604	A2	3701	C3	3727	B2	3759	A2	4703	A2	4729	C2	7614	A1
2624	A2	2727	C3	3605	A2	3702	C2	3728	B2	3760	B2	4704	A2	4730	C2	7616	A3
2625	A3	2728	B2	3606	A1	3703	C2	3729	B2	3762	B3	4705	A1	4731	C1	7618	A1
2626	A2	2729	B2	3608	A3	3704	C2	3730	B2	3763	C1	4706	A1	4732	C3	7619	A1
2627	A1	2730	B2	3610	A3	3705	C2	3731	B2	3765	C1	4707	A3	4733	C3	7620	A1
2701	C3	2733	C1	3612	A3	3706	C2	3732	B2	3766	C1	4708	A3	4734	C2	7622	A2
2702	C2	2734	C1	3613	A2	3707	C2	3733	B2	3767	C1	4709	B3	4735	C2	7623	A2
2703	C2	2735	C2	3614	A3	3708	C2	3734	C2	3768	C1	4710	A3	4736	C2	7624	A3
2704	C2	2737	C1	3616	A3	3709	C2	3735	C1	3769	B3	4711	A3	4737	C2	7710	C2
2705	C2	2738	C1	3618	A3	3710	C2	3736	C2	3770	B3	4712	A2	4738	B1	7720	C2
2706	C2	2742	B3	3619	A3	3711	C2	3741	C2	3771	B3	4713	A2	4739	C1	7730	B3
2707	C2	2743	C3	3623	A1	3712	C2	3742	C1	3772	A3	4714	B2	4740	C1	7740	B2
2708	C2	2744	B2	3624	A1	3713	C1	3743	B1	3774	B3	4715	A2	4741	C2	7780	A3
2709	C2	2745	C3	3625	A1	3714	C1	3744	B1	3775	C3	4716	B2	4742	C2	7781	B3
2710	C2	2746	C1	3626	A1	3715	C1	3745	C1	3776	B3	4717	B2	4744	A3	7783	B3
2711	C1	2747	C1	3628	A1	3716	C1	3746	C1	3777	B3	4718	B2	4745	A2	7784	C3
2712	C1	2760	B3	3630	A1	3717	B2	3748	C1	3779	C3	4719	B3	4746	A2	7787	C1
2717	B2	2769	C1	3672	A3	3718	C3	3749	B2	3780	C3	4720	B2	4747	A2	7791	A2
2718	C3	2770	B1	3676	A2	3719	B3	3751	A2	3781	C2	4721	B2	4748	C2	7792	A2
2719	B3	2781	C3	3678	A1	3720	B3	3752	A2	3784	C2	4722	B2	4785	A2		
2720	B3	2782	B3	3679	A1	3721	B3	3753	A2	3786	A3	4723	B2	4790	C3		
2721	B2	2786	C3	3680	A1	3722	B3	3754	A2	3787	A3	4724	B2	4794	C1		
2722	B2	2787	C3	3686	A3	3723	C3	3755	A2	3788	C3	4725	B2	4795	B2		
2723	B2	3601	A2	3687	A2	3724	B2	3756	A2	3789	B3	4726	B2	7610	A3		


1
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7619
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3606
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7613
4703
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4704
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7610
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3612
3608
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7624
3614
3672
3619
7616
3618
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3688
3772
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4708
3786
7780
3787
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4709
3687
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7730
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3776
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2704
3704
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2702
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3714
3716
7720
4794
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7784
3780
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3779
4733
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7781
3777
7787
2743
3771
3770
4738
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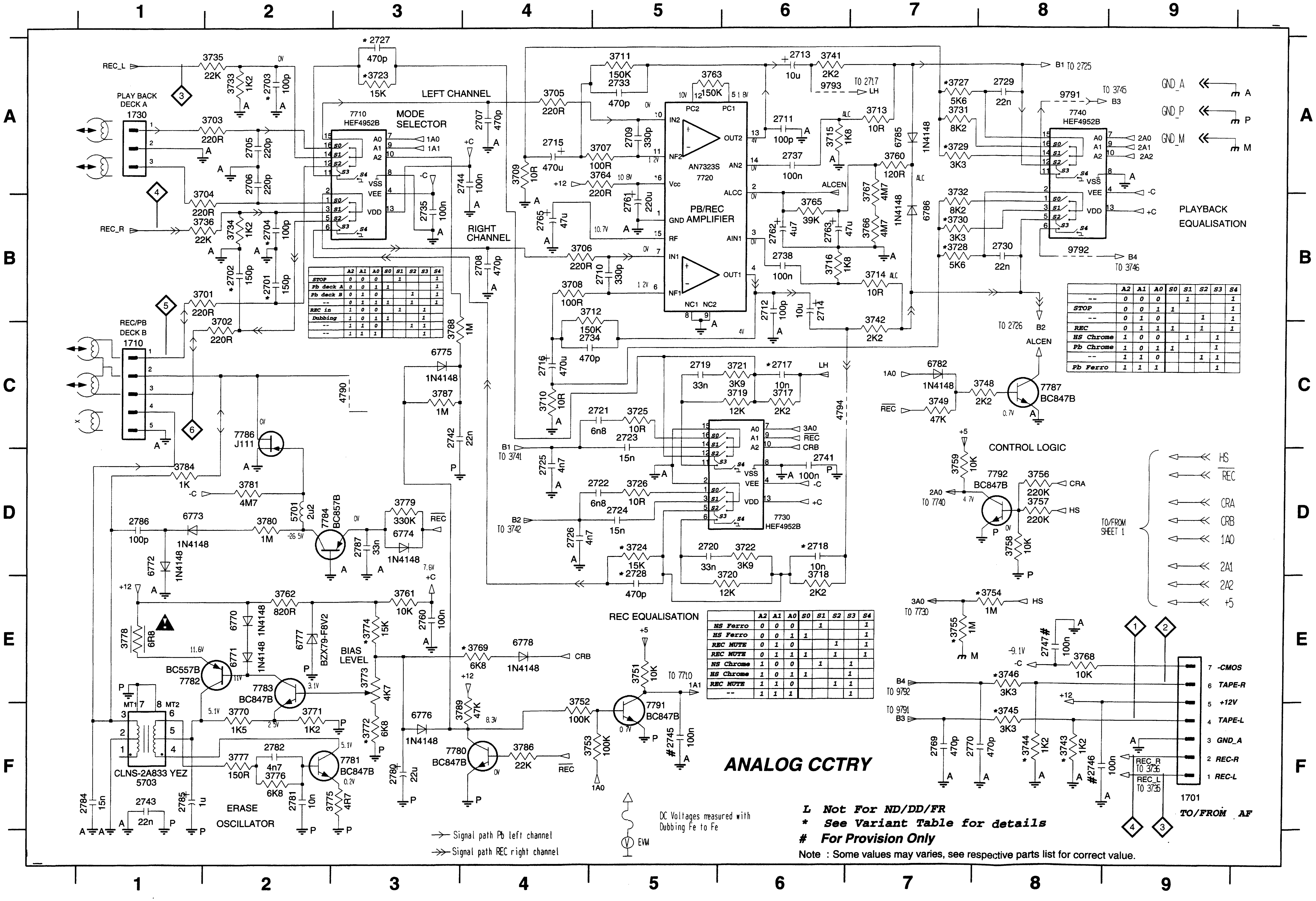
2734
2738
2735
2746
2712
2727

ANALOG CIRCUIT

1701 F9
1710 C1
1730 A1
2701 B2
2702 B2
2703 A2
2704 B2
2705 A2
2706 A2
2707 A4
2708 B4
2709 A5
2710 B5
2711 A6
2712 B6
2713 A6
2714 B6
2715 A4
2716 C4
2717 C6
2718 D6
2719 C5
2720 D5
2721 C5
2722 D5
2723 C5
2724 D5
2725 D4
2726 D4
2727 A3
2728 E5
2729 A8
2730 B8
2733 A5
2734 C4
2735 B3
2737 A6
2738 B6
2741 D6
2742 C3
2743 F1
2744 A4
2745 F5
2746 F8
2747 E8
2760 E3
2761 B5
2762 B6
2763 B6
2765 B4
2769 F7
2770 F8
2780 F3
2781 F2
2782 F2
2784 F1
2785 F1
2786 D1
2787 D3
3701 B1
3702 C2
3703 A2
3704 B1
3705 A4
3706 B4
3707 A5
3708 B4
3709 A4
3710 C4
3711 A5
3712 B4
3713 A7
3714 B7
3715 A6
3716 B6
3717 C6
3718 E6
3719 C6
3720 E6
3721 C6
3722 D6
3723 A3
3724 D5
3725 C5
3726 D5
3727 A7
3728 B7
3729 A7
3730 B7
3731 A7
3732 B7
3733 A2
3734 B2
3735 A2
3736 B1
3741 A6
3742 C7
3743 F8
3744 F8
3745 F8
3746 E8
3748 C8
3749 C7
3751 E5
3752 F4
3753 F5
3754 E8
3755 E7
3756 D8
3757 D8
3758 D8
3759 D7
3760 A7
3761 E3
3762 E2
3763 A5
3764 A5
3765 B6
3766 B7
3767 A7
3768 E8
3769 E4
3770 F2
3771 F2
3772 F3
3773 E3
3774 E3
3775 F3
3776 F2
3777 F2
3778 E1
3779 D3
3780 D2
3781 D2
3784 D1
3786 F4
3787 C3
3788 C3
3789 F4
4790 C3
4794 C6
5701 D2
5703 F1
6770 E2
6771 E2
6772 D1
6773 D1
6774 D3
6775 C3
6776 F3
6777 E2
6778 E4
6782 C7
6785 A7
6786 B7
7710 A3
7720 A5
7730 D6
7740 A8
7780 F4
7781 F3
7782 E1
7783 E2
7784 D2
7786 C2
7787 C8
7791 F5
7792 D8
9791 A8
9792 B8
9793 A6


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
REC_L
REC_R
PLAY BACK DECK A
1730
REC/PB DECK B
1710
LEFT CHANNEL
RIGHT CHANNEL
MODE SELECTOR
7710 HEF4952B
PB/REC AMPLIFIER
AN7323S 7720
PLAYBACK EQUALISATION
7740 HEF4952B
REC EQUALISATION
7730 HEF4952B
CONTROL LOGIC
BIAS LEVEL
ERASE OSCILLATOR
CLNS-2A833 YEZ 5703
7786 J111
7784 BC857B
7782 BC557B
7783 BC847B
7781 BC847B
7780 BC847B
7791 BC847B
7787 BC847B
7792 BC847B
BZX79-F8V2
1N4148
B1 TO 2725
B2 TO 3742
B3
B4 TO 3746
ALCEN
LH
CRB
CRA
HS
REC
TO/FROM SHEET 1
GND_A
GND_P
GND_M
7 -CMOS
6 TAPE-R
5 +12V
4 TAPE-L
3 GND_A
2 REC-R
1 REC-L
1701
TO/FROM AF
ANALOG CCTRY
Signal path Pb left channel
Signal path REC right channel
DC Voltages measured with Dubbing Fe to Fe
EVM

	A2	A1	A0	S0	S1	S2	S3	S4
STOP	0	0	0		1			1
Pb deck A	0	0	1	1				1
Pb deck B	0	1	0			1		1
--	0	1	1	1		1		1
REC in	1	0	0		1		1	
Dubbing	1	0	1	1			1	
--	1	1	0			1	1	
--	1	1	1				1	

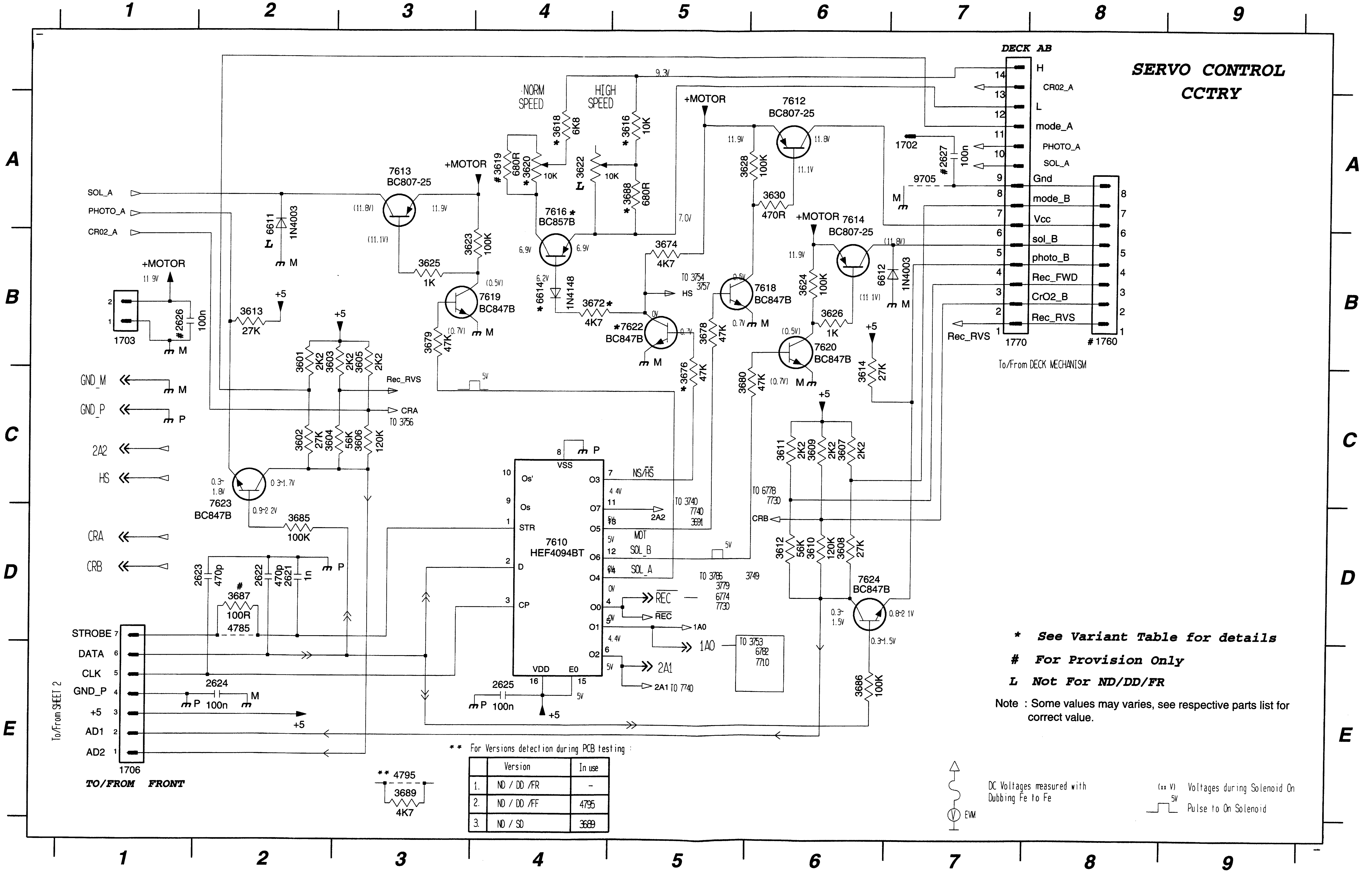
	A2	A1	A0	S0	S1	S2	S3	S4
--	0	0	0		1			1
STOP	0	0	1	1				1
--	0	1	0			1		1
REC	0	1	1	1		1		1
HS Chrome	1	0	0		1		1	
Pb Chrome	1	0	1	1			1	
--	1	1	0			1	1	
Pb Ferro	1	1	1				1	

	A2	A1	A0	S0	S1	S2	S3	S4
NS Ferro	0	0	0		1			1
HS Ferro	0	0	1	1				1
REC MUTE	0	1	0			1		1
REC MUTE	0	1	1	1		1		1
NS Chrome	1	0	0		1		1	
HS Chrome	1	0	1	1			1	
REC MUTE	1	1	0			1	1	
--	1	1	1				1	

L Not For ND/DD/FR
*** See Variant Table for details**
# For Provision Only
Note : Some values may varies, see respective parts list for correct value.

SERVO CONTROL CIRCUIT

1702 A7
1703 B1
1706 E1
1760 B8
1770 B7
2621 D2
2622 D2
2623 D2
2624 E2
2625 E4
2626 B1
2627 A7
3601 B2
3602 C2
3603 B2
3604 C2
3605 B3
3606 C3
3607 C6
3608 D6
3609 C6
3610 D6
3611 C6
3612 D6
3613 B2
3614 C6
3616 A5
3618 A4
3619 A4
3620 A4
3622 A4
3623 B3
3624 B6
3625 B3
3626 B6
3628 A5
3630 A6
3672 B4
3674 B5
3676 C5
3678 B5
3679 B3
3680 C5
3685 D2
3686 E6
3687 D2
3688 A5
3689 E3
4785 D2
4795 E3
6611 A2
6612 B6
6614 B4
7610 D4
7612 A6
7613 A3
7614 A6
7616 A4
7618 B6
7619 B4
7620 B6
7622 B5
7623 D2
7624 D6
9705 A7



1
2
3
4
5
6
7
8
9
A
B
C
D
E
SERVO CONTROL CCTRY
DECK AB
H
CR02_A
L
mode_A
PHOTO_A
SOL_A
Gnd
mode_B
Vcc
sol_B
photo_B
Rec_FWD
CrO2_B
Rec_RVS
1770
#1760
To/From DECK MECHANISM
1702
#2627 100n
9705
NORM SPEED
HIGH SPEED
*3618 6K8
#3619 680R
*3620 10K
3622 L 10K
*3616 10K
*3688 680R
9.3V
+MOTOR
7612 BC807-25
7613 BC807-25
7614 BC807-25
7616* BC857B
7618 BC847B
7619 BC847B
7620 BC847B
*7622 BC847B
7623 BC847B
7624 BC847B
3628 100K
3630 470R
3674 4K7
3672* 4K7
*6614 1N4148
6611 1N4003 L
6612 1N4003
3623 100K
3625 1K
3679 47K
3678 47K
*3676 47K
3680 47K
3624 100K
3626 1K
3614 27K
3613 27K
3601 2K2
3603 2K2
3605 2K2
3602 27K
3604 56K
3606 120K
3611 2K2
3609 2K2
3607 2K2
3612 56K
3610 120K
3608 27K
3686 100K
3685 100K
#3687 100R
4785
2623 470p
2622 470p
2621 1n
2624 100n
2625 100n
#2626 100n
1703
SOL_A
PHOTO_A
CR02_A
GND_M
GND_P
2A2
HS
CRA
CRB
Rec_RVS
CRA TO 3756
TO 3754 3757
7610 HEF4094BT
VSS
VDD
E0
STR
D
CP
Os'
Os
O0
O1
O2
O3
O4
O5
O6
O7
NS/HS
MOT
SOL_B
SOL_A
REC
1A0
2A1
2A2
TO 3740 7740 3691
TO 3786 3779 6774 7730
TO 3753 6782 7710
2A1 TO 7740
TO 6778 7730
CRB
STROBE
DATA
CLK
GND_P
+5
AD1
AD2
1706
TO/FROM FRONT
To/From SHEET 2
** 4795
3689 4K7

* See Variant Table for details

# For Provision Only

L Not For ND/DD/FR

Note : Some values may varies, see respective parts list for correct value.

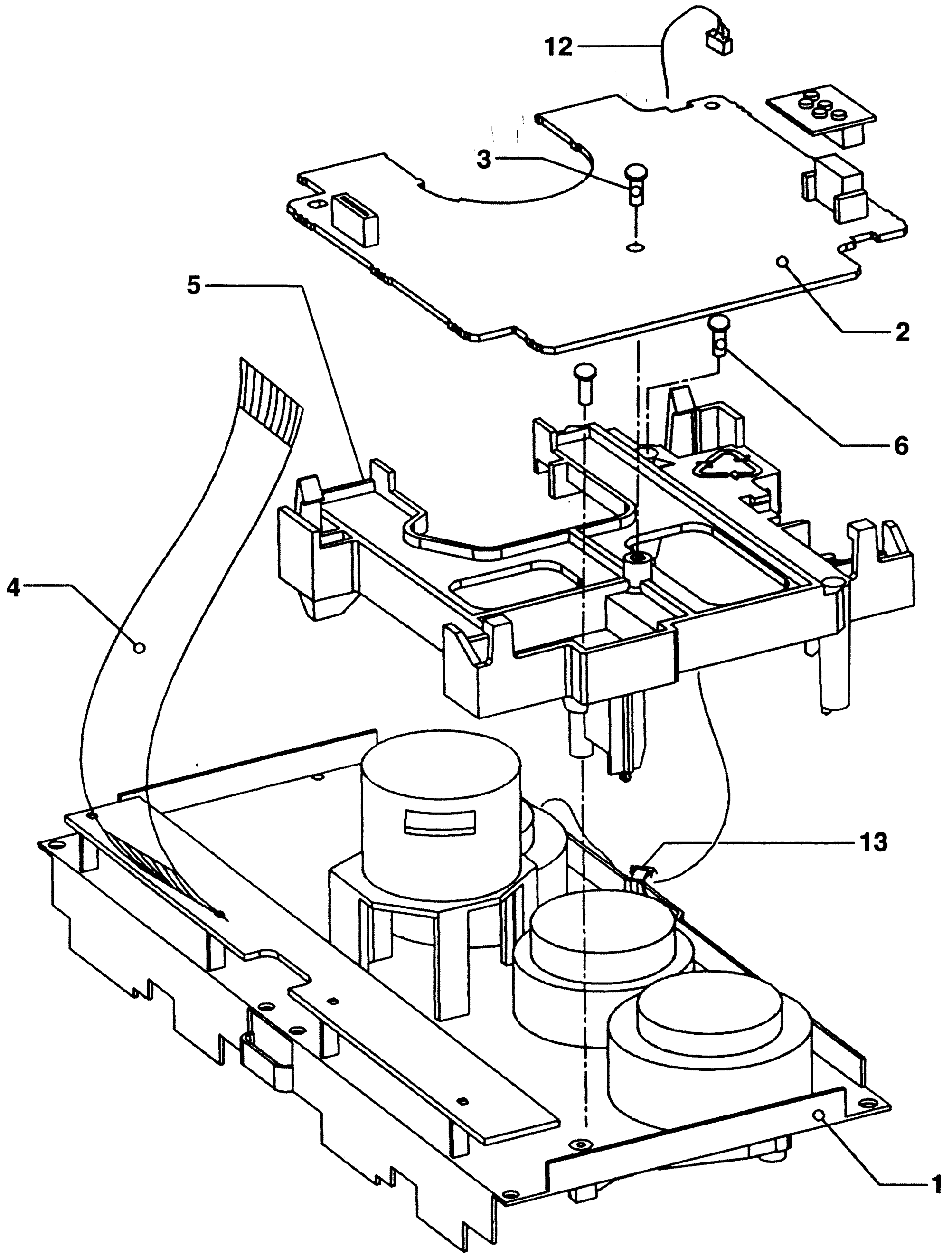
** For Versions detection during PCB testing :

	Version	In use
1.	ND / DD /FR	-
2.	ND / DD /FF	4795
3.	ND / SD	3689

DC Voltages measured with Dubbing Fe to Fe

(xx V) Voltages during Solenoid On

5V Pulse to On Solenoid

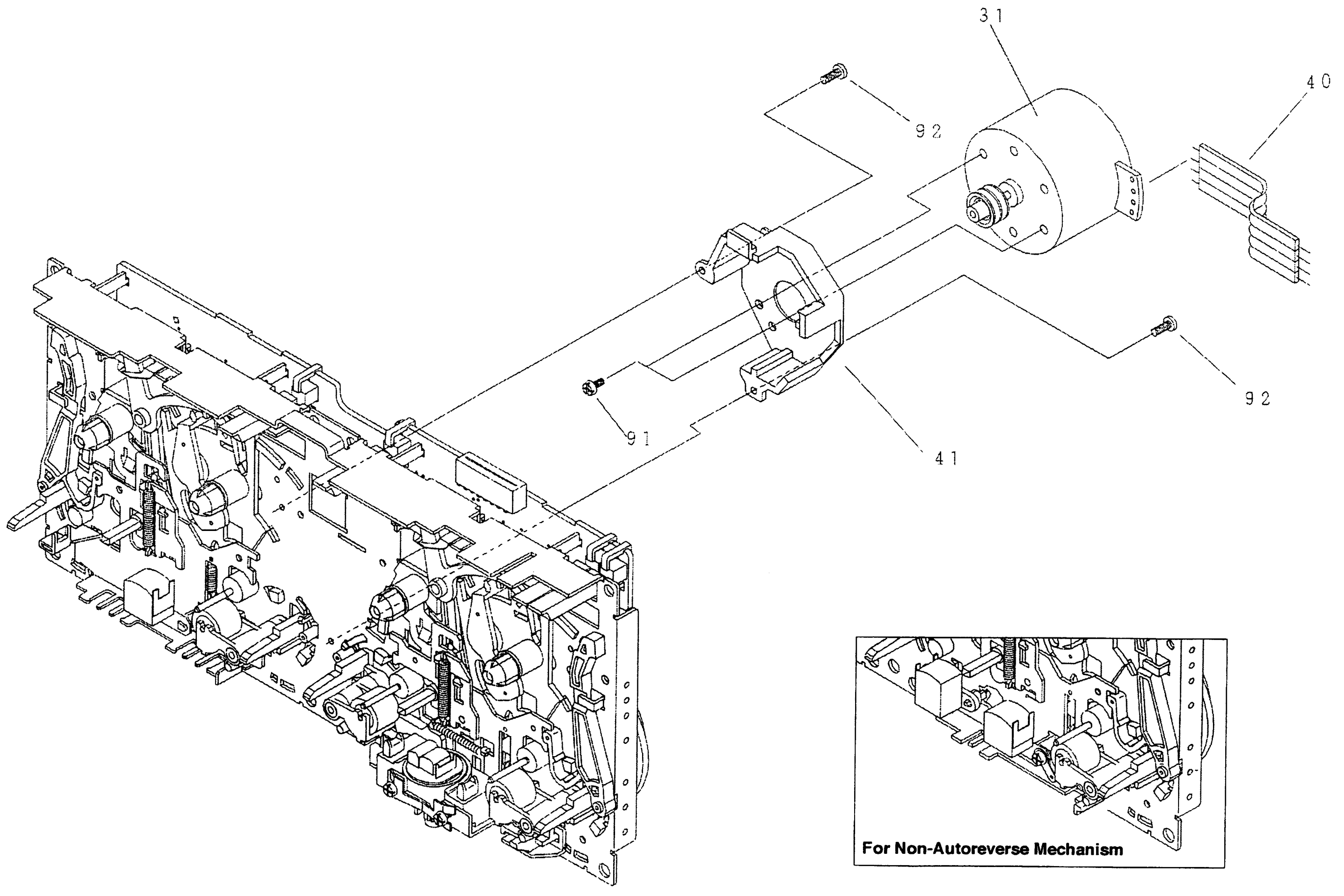

12
3
5
2
6
4
13
1

3139 118 77070 (Incl. ...77080) dd wk926

TAPE MODULE EXPLODED VIEW

1	313911877130	Autoreverse Mech. CWE44FR01
1	313911877140	Non-Autoreverse Mech. CWE44FF02
3	-	Screw D3 x 10
6	-	Screw M2 x 16
7	313911034080	Flex Cable 14 pin 7,5 cm

Note: Only the parts mentioned in this list are normal service spare parts.


31
40
92
92
91
41
For Non-Autoreverse Mechanism

TAPE MECHANISM - MOTOR EXPLODED VIEW

31	4822 361 11055	Motor Assembly
91	-	Screw M2,6 x 5
92	-	Screw M2 x 5

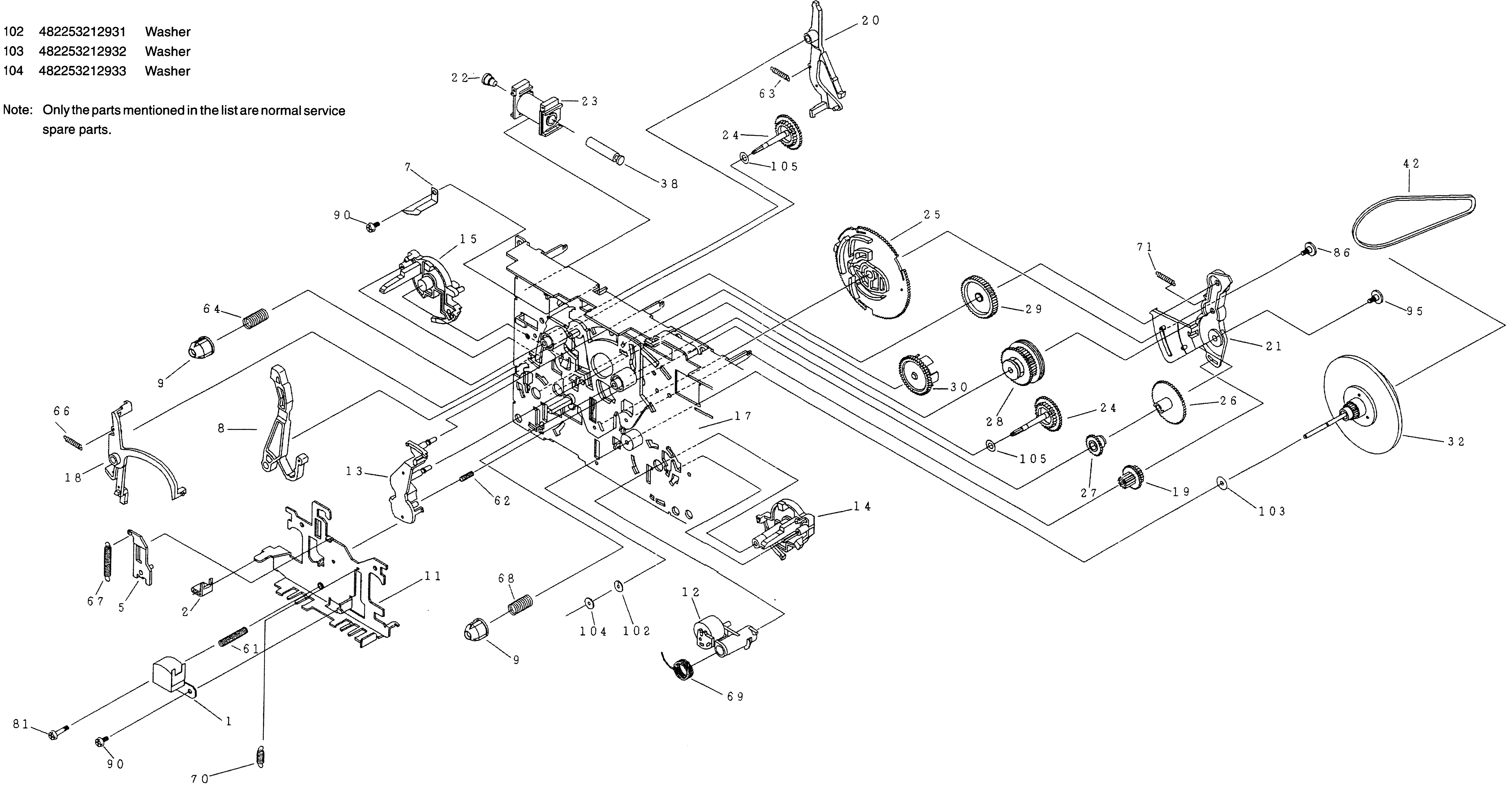
Note: Only the parts mentioned in this list are normal service spare parts.

TAPE MECHANISM A - PLAY

MECHANICAL PARTS - PLAY MECHANISM

1	996500002313	Play Head (Non-Autoreverse deck)
1	996500002321	Play Head (Autoreverse deck)
12	482240210972	Pinch Arm Assembly R
23	996500002314	Coil Assembly
32	482252811209	Flywheel Assembly RV
42	996500002315	Belt AF (Autoreverse deck)
42	996500002718	Belt AF (Non-autoreverse deck)
69	482249211761	Spring
102	482253212931	Washer
103	482253212932	Washer
104	482253212933	Washer

Note: Only the parts mentioned in the list are normal service spare parts.

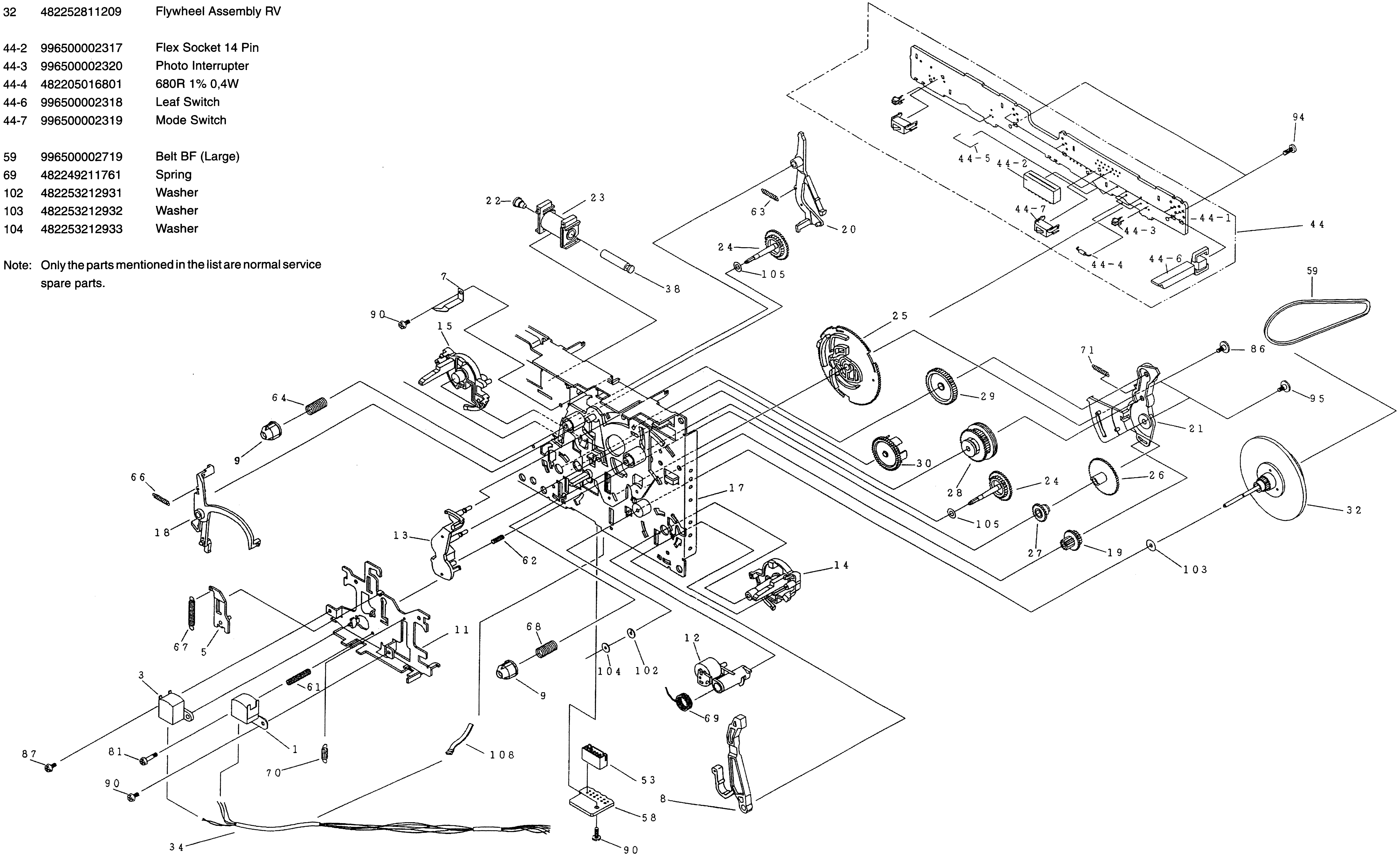

20
22
23
63
24
105
38
7
90
15
25
42
71
86
29
95
21
64
9
30
28
24
26
66
8
17
32
13
105
27
19
18
62
103
14
67
5
2
11
68
12
104
102
61
9
69
81
1
90
70

TAPE MECHANISM B - RECORD/PLAYBACK *(Non-Autoreverse version)*

MECHANICAL PARTS - REC/PB MECHANISM

1	996500002313	Play Head
3	996500002600	Head, Erase
12	482240210972	Pinch Arm Assembly R
23	996500002314	Coil Assembly
32	482252811209	Flywheel Assembly RV
44-2	996500002317	Flex Socket 14 Pin
44-3	996500002320	Photo Interrupter
44-4	482205016801	680R 1% 0,4W
44-6	996500002318	Leaf Switch
44-7	996500002319	Mode Switch
59	996500002719	Belt BF (Large)
69	482249211761	Spring
102	482253212931	Washer
103	482253212932	Washer
104	482253212933	Washer

Note: Only the parts mentioned in the list are normal service spare parts.

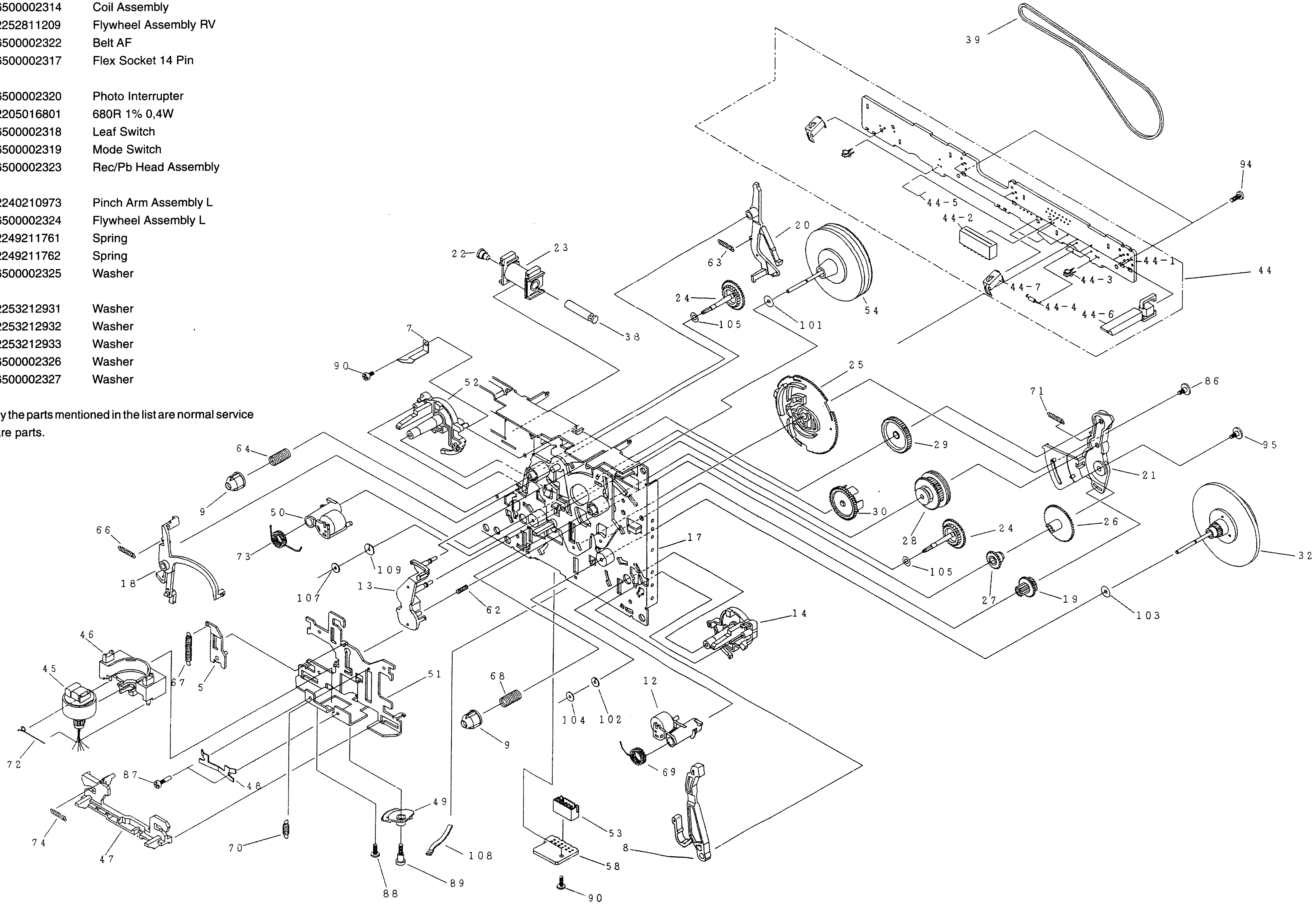

94
44-5
44-2
44-7
44-1
44-3
44
44-4
44-6
59
22
23
63
20
24
105
38
7
90
15
25
71
86
95
29
21
64
9
30
28
24
26
32
66
17
105
18
13
62
27
19
103
14
11
68
12
67
5
104
102
3
61
9
69
87
81
1
108
90
70
53
8
58
34
90

TAPE MECHANISM B - RECORD/PLAYBACK *(Autoreverse version)*

MECHANICAL PARTS - REC/PB MECHANISM

12	482240210972	Pinch Arm Assembly R
23	996500002314	Coil Assembly
32	482252811209	Flywheel Assembly RV
39	996500002322	Belt AF
44-2	996500002317	Flex Socket 14 Pin
44-3	996500002320	Photo Interrupter
44-4	482205016801	680R 1% 0,4W
44-6	996500002318	Leaf Switch
44-7	996500002319	Mode Switch
45	996500002323	Rec/Pb Head Assembly
50	482240210973	Pinch Arm Assembly L
54	996500002324	Flywheel Assembly L
69	482249211761	Spring
73	482249211762	Spring
101	996500002325	Washer
102	482253212931	Washer
103	482253212932	Washer
104	482253212933	Washer
107	996500002326	Washer
109	996500002327	Washer

Note: Only the parts mentioned in the list are normal service spare parts.


39
94
44-5
44-2
44-1
44
44-7
44-3
44-4
44-6
20
63
54
24
105
101
22
23
38
7
90
52
25
71
86
29
95
21
64
9
50
30
28
24
26
66
73
109
17
105
32
27
19
103
18
107
13
62
14
46
45
67
5
51
68
12
104
102
9
69
72
87
48
49
74
47
70
108
53
8
58
88
89
90

ELECTRICAL PARTS LIST - ETF7 NON-DOLBY BOARD

MISCELLANEOUS

1701	482226710953	Flex Socket 7pin Vert.	
1706	482226710953	Flex Socket 7pin Vert.	
1770	482226751255	Flex Socket 14pin Vert.	

CAPACITORS

2621	532212231647	1nF 10% 63V	
2622	532212234099	470pF 10% 63V	
2623	532212234099	470pF 10% 63V	
2624	482212614585	100nF 10% 50V	
2625	482212614585	100nF 10% 50V	
2701	532212233538	150pF 2% 63V	Autoreverse
2701	482212233216	270pF 5% 63V	Non-autoreverse
2702	532212233538	150pF 2% 63V	Autoreverse
2702	482212233216	270pF 5% 63V	Non-autoreverse
2703	532212232531	100pF 5% 50V	Autoreverse
2703	482212233575	220pF 5% 63V	Non-autoreverse
2704	532212232531	100pF 5% 50V	Autoreverse
2704	482212233575	220pF 5% 63V	Non-autoreverse
2705	482212233575	220pF 5% 63V	
2706	482212233575	220pF 5% 63V	
2707	532212234099	470pF 10% 63V	
2708	532212234099	470pF 10% 63V	
2709	532212231863	330pF 5% 63V	
2710	532212231863	330pF 5% 63V	
2711	532212232531	100pF 5% 50V	
2712	532212232531	100pF 5% 50V	
2713	482212440248	10µF 20% 63V	
2714	482212440248	10µF 20% 63V	
2715	482212480195	470µF 20% 10V	
2716	482212480195	470µF 20% 10V	
2717	482212233177	10nF 20% 50V	Autoreverse
2717	482212613188	15nF 5% 63V	Non-autoreverse
2718	482212233177	10nF 20% 50V	Autoreverse
2718	482212613188	15nF 5% 63V	Non-autoreverse
2719	482212612105	33nF 5% 50V	
2720	482212612105	33nF 5% 50V	
2721	532212231866	6,8nF 10% 63V	
2722	532212231866	6,8nF 10% 63V	
2723	482212613188	15nF 5% 63V	
2724	482212613188	15nF 5% 63V	
2725	532212610223	4,7nF 10% 63V	
2726	532212610223	4,7nF 10% 63V	
2727	532212234099	470pF 10% 63V	Autoreverse
2727	532212231647	1nF 10% 63V	Non-autoreverse
2728	532212234099	470pF 10% 63V	Autoreverse
2728	532212231647	1nF 10% 63V	Non-autoreverse
2729	532212232654	22nF 10% 63V	
2730	532212232654	22nF 10% 63V	
2733	532212234099	470pF 10% 63V	
2734	532212234099	470pF 10% 63V	
2735	482212614585	100nF 10% 50V	
2737	482212614585	100nF 10% 50V	
2738	482212614585	100nF 10% 50V	
2741	482212611585	22nF +80/-20% 25V	
2742	532212232654	22nF 10% 63V	
2743	532212232654	22nF 10% 63V	
2744	482212614585	100nF 10% 50V	
2760	482212614585	100nF 10% 50V	
2761	482212480144	220µF 20% 25V	
2762	482212440769	4,7µF 20% 100V	
2763	482212440433	47µF 20% 25V	
2765	482212440433	47µF 20% 25V	
2769	532212234099	470pF 10% 63V	
2770	532212234099	470pF 10% 63V	
2780	482212481151	22µF 20% 50V	
2781	482212233177	10nF 20% 50V	
2782	532212610223	4,7nF 10% 63V	
2784	482212151305	15nF 10% 50V	
2785	482212421913	1µF 20% 63V	
2786	532212232531	100pF 5% 50V	
2787	482212612105	33nF 5% 50V	

RESISTORS

3601	482211711449	2k2 1% 0,1W	
3602	482205120273	27k 5% 0,1W	
3603	482211711449	2k2 1% 0,1W	
3604	482211711148	56k 1% 0,1W	
3605	482211711449	2k2 1% 0,1W	
3606	482205120124	120k 5% 0,1W	
3607	482211652256	2k2 5% 0,5W	
3608	482205120273	27k 5% 0,1W	
3609	482211652256	2k2 5% 0,5W	
3610	482205120124	120k 5% 0,1W	
3611	482211652256	2k2 5% 0,5W	
3612	482211711148	56k 1% 0,1W	
3613	482205120273	27k 5% 0,1W	
3614	482205120273	27k 5% 0,1W	
3616	482211710833	10k 1% 0,1W	Autoreverse
3616	482205110102	1k 2% 0,25W	Non-autoreverse
3618	482211711507	6k8 1% 0,1W	Autoreverse
3620	482210011141	Trimmer 10k 30% 0,1W	Autorev.
3622	482210011141	Trimmer 10k 30% 0,1W	Non-autorev.
3623	482211710837	100k 1% 0,1W	
3624	482211710837	100k 1% 0,1W	
3625	482205110102	1k 2% 0,25W	
3626	482205110102	1k 2% 0,25W	
3628	482211710837	100k 1% 0,1W	
3630	482205120471	470R 5% 0,1W	
3672	482205120472	4k7 5% 0,1W	Autoreverse
3674	482211652283	4k7 5% 0,5W	
3676	482211710834	47k 1% 0,1W	Autoreverse
3678	482211710834	47k 1% 0,1W	
3679	482211710834	47k 1% 0,1W	
3680	482211710834	47k 1% 0,1W	
3685	482211652234	100k 5% 0,5W	
3686	482211710837	100k 1% 0,1W	
3688	482211710361	680R 1% 0,1W	Autoreverse
3701	482211711503	220R 1% 0,1W	
3702	482211711503	220R 1% 0,1W	
3703	482211711503	220R 1% 0,1W	
3704	482211711503	220R 1% 0,1W	
3705	482211711503	220R 1% 0,1W	
3706	482211711503	220R 1% 0,1W	
3707	482205120101	100R 5% 0,1W	
3708	482205120101	100R 5% 0,1W	
3709	482205120109	10R 5% 0,1W	
3710	482205120109	10R 5% 0,1W	
3711	482205120154	150k 5% 0,1W	
3712	482205120154	150k 5% 0,1W	
3713	482205120109	10R 5% 0,1W	
3714	482205120109	10R 5% 0,1W	
3715	482205120182	1k8 5% 0,1W	
3716	482205120182	1k8 5% 0,1W	
3717	482211711449	2k2 1% 0,1W	
3718	482211711449	2k2 1% 0,1W	
3719	482211711383	12k 1% 0,1W	
3720	482211711383	12k 1% 0,1W	
3721	482205120392	3k9 5% 0,1W	
3722	482205120392	3k9 5% 0,1W	
3723	482211683933	15k 1% 0,1W	Autoreverse
3723	482211710965	18k 1% 0,1W	Non-autoreverse
3724	482211683933	15k 1% 0,1W	Autoreverse
3724	482211710965	18k 1% 0,1W	Non-autoreverse
3725	482205120109	10R 5% 0,1W	
3726	482205120109	10R 5% 0,1W	
3727	482205120562	5k6 5% 0,1W	Autoreverse
3727	482211711507	6k8 1% 0,1W	Non-autoreverse
3728	482205120562	5k6 5% 0,1W	Autoreverse
3728	482211711507	6k8 1% 0,1W	Non-autoreverse
3729	482205120332	3k3 5% 0,1W	Autoreverse
3729	482205120472	4k7 5% 0,1W	Non-autoreverse
3730	482205120332	3k3 5% 0,1W	Autoreverse
3730	482205120472	4k7 5% 0,1W	Non-autoreverse
3731	482205120822	8k2 5% 0,1W	
3732	482205120822	8k2 5% 0,1W	
3733	482205120122	1k2 5% 0,1W	
3734	482205120122	1k2 5% 0,1W	
3735	482205120223	22k 5% 0,1W	
3736	482205120223	22k 5% 0,1W	
3741	482211711449	2k2 1% 0,1W	
3742	482211711449	2k2 1% 0,1W	
3743	482211711139	1k5 1% 0,1W	Autoreverse
3743	482211711449	2k2 1% 0,1W	Non-autoreverse
3744	482211711139	1k5 1% 0,1W	Autoreverse
3744	482211711449	2k2 1% 0,1W	Non-autoreverse
3745	482205120332	3k3 5% 0,1W	Autoreverse
3745	482205120562	5k6 5% 0,1W	Non-autoreverse
3746	482205120332	3k3 5% 0,1W	Autoreverse
3746	482205120562	5k6 5% 0,1W	Non-autoreverse
3748	482211711449	2k2 1% 0,1W	
3749	482211710834	47k 1% 0,1W	
3751	482211710833	10k 1% 0,1W	
3752	482211710837	100k 1% 0,1W	
3753	482211710837	100k 1% 0,1W	
3754	482205120105	1M 5% 0,1W	Autoreverse
3754	482205120479	47R 5% 0,1W	Non-autoreverse
3755	482205120105	1M 5% 0,1W	Autoreverse
3755	482205120479	47R 5% 0,1W	Non-autoreverse
3756	482211713579	220k 1% 0,1W	
3757	482211713579	220k 1% 0,1W	
3758	482211710833	10k 1% 0,1W	
3759	482211710833	10k 1% 0,1W	
3760	482205120121	120R 5% 0,1W	
3761	482205021003	10k 1% 0,6W	
3762	482211711454	820R 1% 0,1W	
3763	482205120154	150k 5% 0,1W	
3764	482211683872	220R 5% 0,5W	
3765	482205120393	39k 5% 0,1W	
3766	482205120475	4M7 5% 0,1W	
3767	482205120475	4M7 5% 0,1W	
3768	482211710833	10k 1% 0,1W	
3769	482211711383	12k 1% 0,1W	Autoreverse
3769	482205120822	8k2 5% 0,1W	Non-autoreverse
3770	482211711139	1k5 1% 0,1W	
3771	482205120122	1k2 5% 0,1W	
3772	482211711507	6k8 1% 0,1W	Autoreverse
3772	482205120562	5k6 5% 0,1W	Non-autoreverse
3773	482210012227	Trimmer 4k7 30% 0,1W	
3774	482211683933	15k 1% 0,1W	Autoreverse
3774	482205120822	8k2 5% 0,1W	Non-autoreverse
3775	482205120478	4R7 5% 0,1W	
3776	482211711507	6k8 1% 0,1W	
3777	482211710353	150R 1% 0,1W	
3778	482205210688	⚠ 6R8 5% 0,33W	
3779	482205120334	330k 5% 0,1W	
3780	482205120105	1M 5% 0,1W	
3781	482205120475	4M7 5% 0,1W	
3784	482205110102	1k 2% 0,25W	
3786	482205120223	22k 5% 0,1W	
3787	482205120105	1M 5% 0,1W	
3788	482205120105	1M 5% 0,1W	
3789	482211710834	47k 1% 0,1W	
4701	482205120008	0R Jumper 0805	
4702	482205120008	0R Jumper 0805	
4703	482205120008	0R Jumper 0805	
4704	482205120008	0R Jumper 0805	
4705	482205120008	0R Jumper 0805	
4706	482205120008	0R Jumper 0805	

ELECTRICAL PARTS LIST - ETF7 NON-DOLBY BOARD

RESISTORS

4707	482205120008	0R Jumper 0805
4708	482205120008	0R Jumper 0805
4709	482205120008	0R Jumper 0805
4710	482205120008	0R Jumper 0805
4711	482205120008	0R Jumper 0805
4712	482205120008	0R Jumper 0805
4713	482205120008	0R Jumper 0805
4714	482205120008	0R Jumper 0805
4715	482205120008	0R Jumper 0805
4716	482205120008	0R Jumper 0805
4717	482205120008	0R Jumper 0805
4718	482205120008	0R Jumper 0805
4719	482205120008	0R Jumper 0805
4720	482205120008	0R Jumper 0805
4721	482205120008	0R Jumper 0805
4722	482205120008	0R Jumper 0805
4723	482205120008	0R Jumper 0805
4724	482205120008	0R Jumper 0805
4725	482205120008	0R Jumper 0805
4726	482205120008	0R Jumper 0805
4727	482205120008	0R Jumper 0805
4728	482205120008	0R Jumper 0805
4729	482205120008	0R Jumper 0805
4730	482205120008	0R Jumper 0805
4731	482205120008	0R Jumper 0805
4732	482205120008	0R Jumper 0805
4733	482205120008	0R Jumper 0805
4734	482205120008	0R Jumper 0805
4735	482205120008	0R Jumper 0805
4736	482205120008	0R Jumper 0805
4737	482205120008	0R Jumper 0805
4738	482205120008	0R Jumper 0805
4739	482205120008	0R Jumper 0805
4740	482205120008	0R Jumper 0805
4741	482205120008	0R Jumper 0805
4742	482205120008	0R Jumper 0805
4744	482205120008	0R Jumper 0805
4745	482205120008	0R Jumper 0805
4746	482205120008	0R Jumper 0805
4748	482205120008	0R Jumper 0805
4785	482205120008	0R Jumper 0805
4790	482205120008	0R Jumper 0805
4794	482205120008	0R Jumper 0805
4795	482205120008	0R Jumper 0805

COILS & FILTERS

5701	482215711477	Coil 2,2µH 5%
5703	482215620946	Osc Coil 100kHz

DIODES

6611	482213031878	1N4003G	
6612	482213031878	1N4003G	
6614	482213030621	1N4148	Autoreverse
6770	482213030621	1N4148	
6771	482213030621	1N4148	
6772	482213030621	1N4148	
6773	482213030621	1N4148	
6774	482213030621	1N4148	
6775	482213030621	1N4148	
6776	482213030621	1N4148	
6777	482213034382	BZX79-F8V2	
6778	482213030621	1N4148	
6782	482213030621	1N4148	
6785	482213030621	1N4148	
6786	482213030621	1N4148	

TRANSISTORS & INTEGRATED CIRCUITS

7610	532220911306	HEF4094BT	
7612	532213060845	BC807-25	
7613	532213060845	BC807-25	
7614	532213060845	BC807-25	
7616	482213060373	BC857B	Autoreverse
7618	482213060511	BC847B	
7619	482213060511	BC847B	
7620	482213060511	BC847B	
7622	482213060511	BC847B	Autoreverse
7623	482213060511	BC847B	
7624	482213060511	BC847B	
7710	482220932919	HEF4952BT	
7720	932214000668	AN7323S	
7730	482220932919	HEF4952BT	
7740	482220932919	HEF4952BT	
7780	482213060511	BC847B	
7781	482213042804	BC817-25	
7782	482213044568	BC557B	
7783	482213060511	BC847B	
7784	482213060373	BC857B	
7786	482213063494	J111	
7787	482213060511	BC847B	
7791	482213060511	BC847B	
7792	482213060511	BC847B	

Note: Only the parts mentioned in this list are normal service spare parts.

ETF7 TAPE MODULE

(Dolby Version)

TABLE OF CONTENTS

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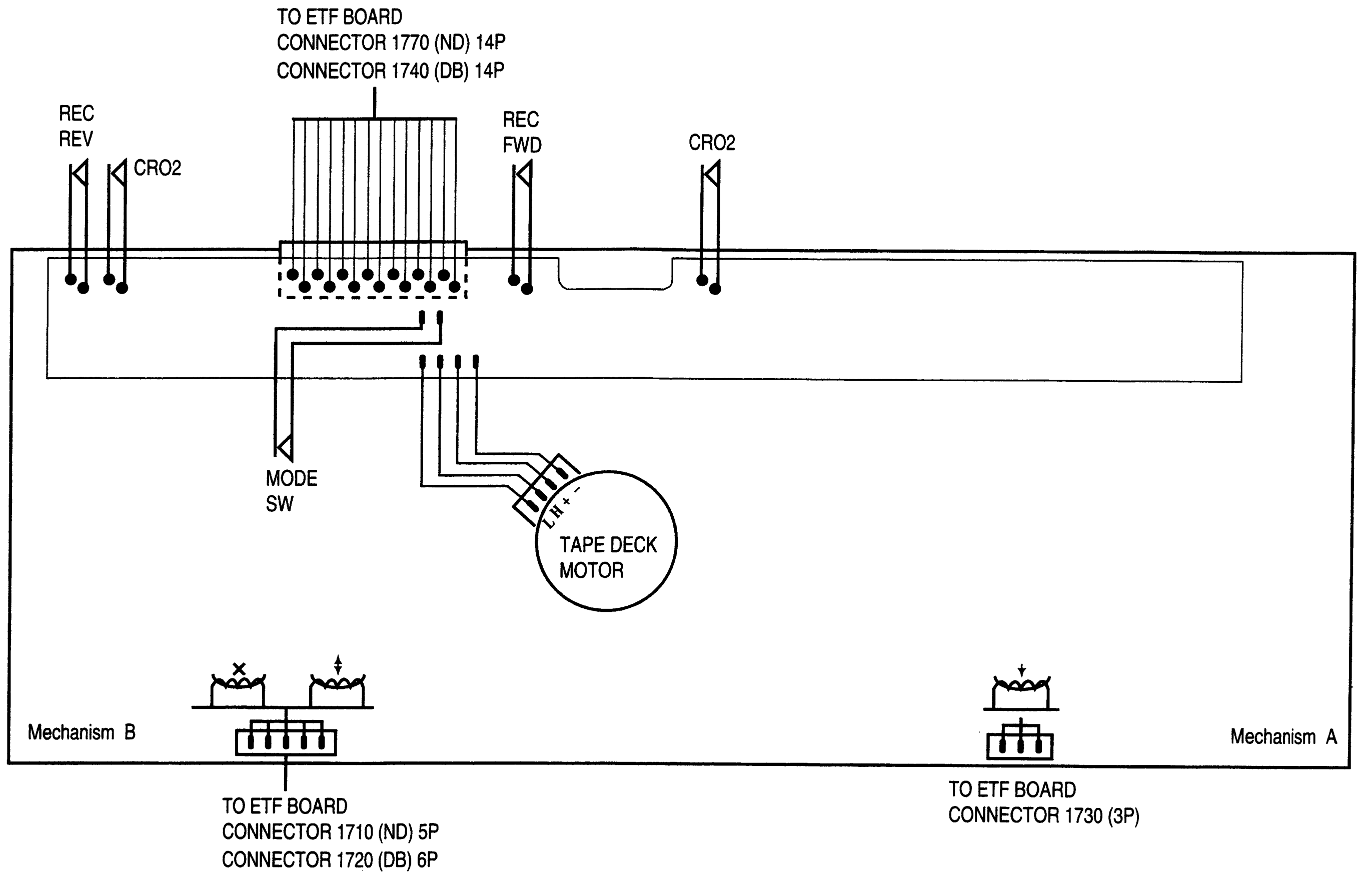
Tapedeck wiring (Double deck)

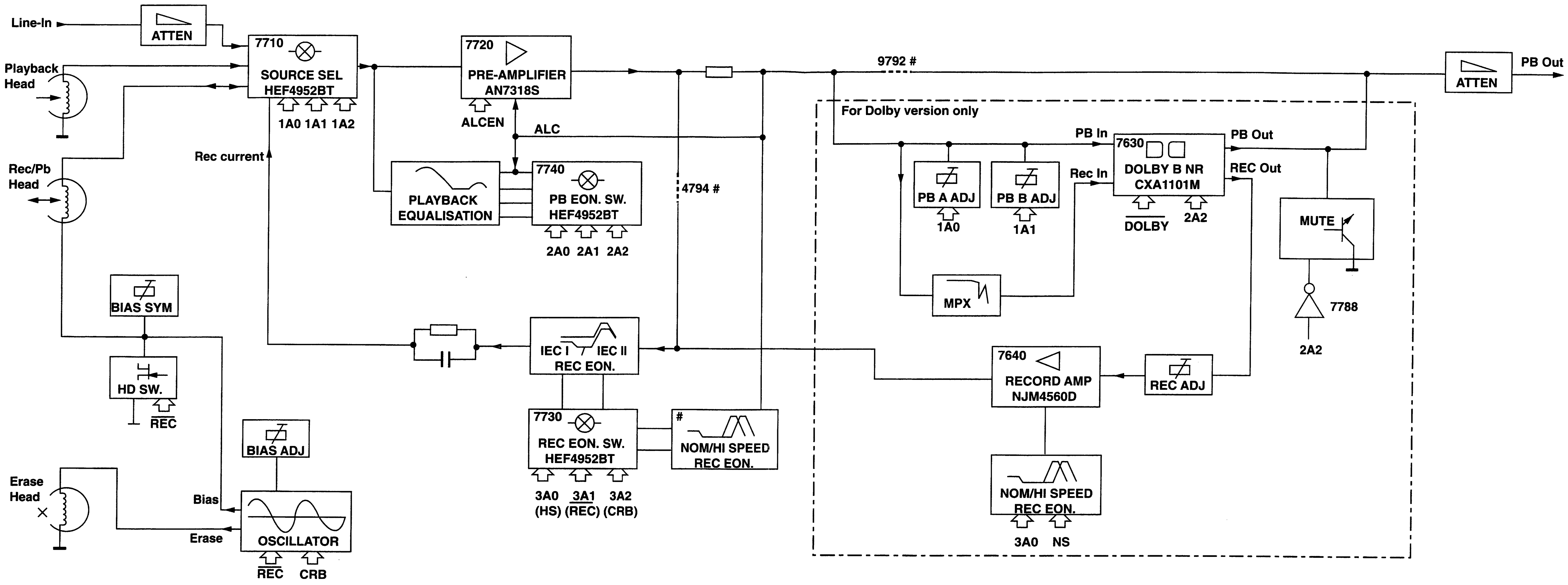

TO ETF BOARD
CONNECTOR 1770 (ND) 14P
CONNECTOR 1740 (DB) 14P
REC
REV
CRO2
REC
FWD
CRO2
MODE
SW
LH+-
TAPE DECK
MOTOR
Mechanism B
Mechanism A
TO ETF BOARD
CONNECTOR 1710 (ND) 5P
CONNECTOR 1720 (DB) 6P
TO ETF BOARD
CONNECTOR 1730 (3P)

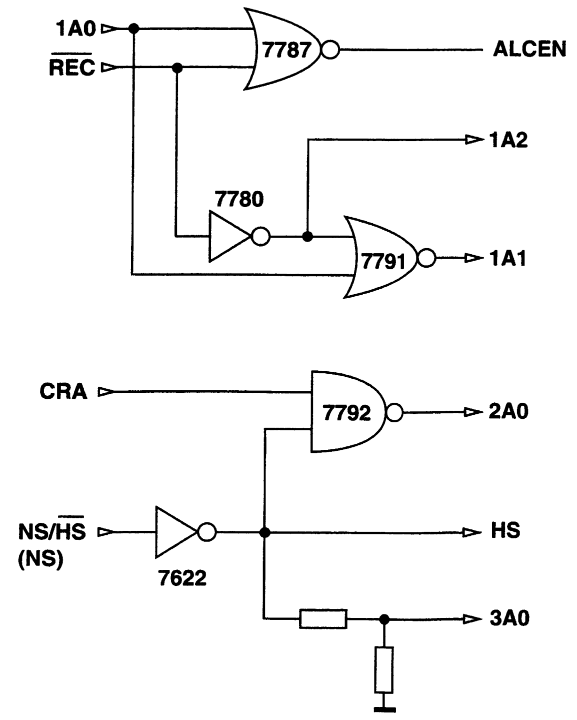
OPTIONS / VARIANTS TABLE

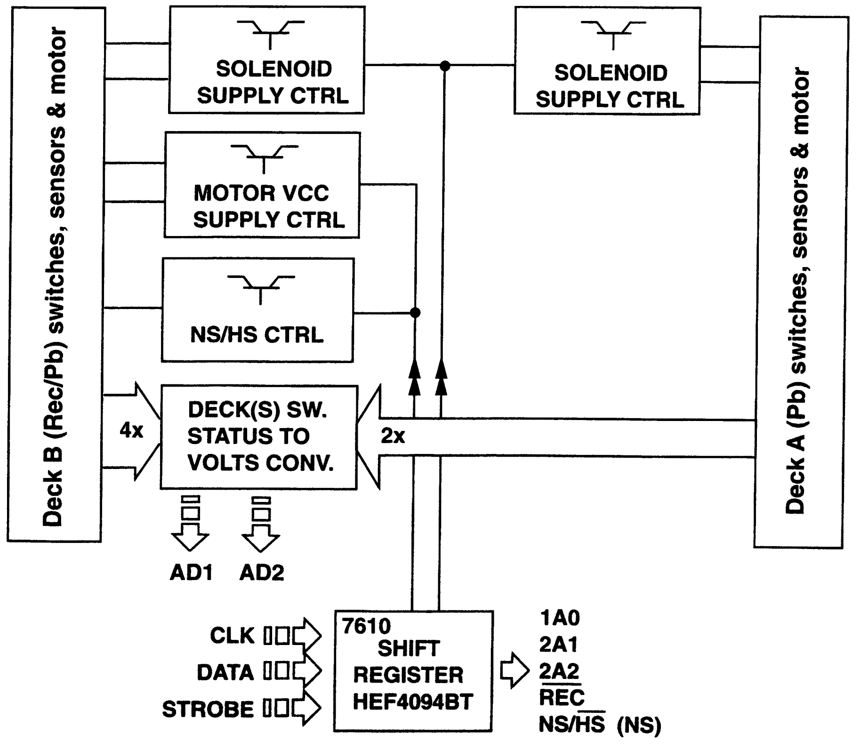
MODULE	**ETF7**		
VARIANT	**1**	**2**	**3**
FEATURES	**DB/DD/FR**	**ND/DD/FR**	**ND/DD/FF**
Deck configuration	double	double	double
Deck type (Tokyo Pigeon)	CWE	CWE	CWE
Autoreverse	yes (B)	yes (B)	no
Auto Replay	no	no	yes (A+B)
Motor configuration	single	single	single
Auto tape type selection	yes	yes	yes
Dolby type B Noise Reduction	yes	no	no
19 kHz pilot suppression	yes	no	no
Normal / High speed dubbing	yes	yes	no
Cue/Review & Fwd/Rewind	yes	yes	yes

DB = Dolby B NR
DD = Double Deck
FF = Non-Autoreverse
FR = Autoreverse Deck B
ND = Non-Dolby
SD = Single Deck

BLOCK DIAGRAM


Line-In
ATTEN
Playback Head
Rec/Pb Head
Erase Head
7710
SOURCE SEL
HEF4952BT
1A0 1A1 1A2
Rec current
7720
PRE-AMPLIFIER
AN7318S
ALCEN
ALC
PLAYBACK EQUALISATION
7740
PB EON. SW.
HEF4952BT
2A0 2A1 2A2
4794 #
9792 #
ATTEN
PB Out
For Dolby version only
PB In
7630
DOLBY B NR
CXA1101M
DOLBY
2A2
PB Out
REC Out
Rec In
PB A ADJ
1A0
PB B ADJ
1A1
MPX
MUTE
7788
2A2
BIAS SYM
HD SW.
REC
BIAS ADJ
Bias
Erase
OSCILLATOR
REC CRB
IEC I IEC II
REC EON.
7730
REC EON. SW.
HEF4952BT
3A0 3A1 3A2
(HS) (REC) (CRB)
#
NOM/HI SPEED
REC EON.
7640
RECORD AMP
NJM4560D
REC ADJ
NOM/HI SPEED
REC EON.
3A0 NS


1A0
REC
7787
ALCEN
1A2
7780
7791
1A1
CRA
7792
2A0
NS/HS
(NS)
7622
HS
3A0


Deck B (Rec/Pb) switches, sensors & motor
SOLENOID SUPPLY CTRL
MOTOR VCC SUPPLY CTRL
NS/HS CTRL
4x
DECK(S) SW. STATUS TO VOLTS CONV.
2x
AD1 AD2
SOLENOID SUPPLY CTRL
Deck A (Pb) switches, sensors & motor
CLK
DATA
STROBE
7610
SHIFT REGISTER
HEF4094BT
1A0
2A1
2A2
REC
NS/HS (NS)

NOTE: # For Non-dolby version only
Only 1 channel is presented.

▯▯▷ MicroProcessor Control / Communication lines

▷ Direct / Indirect Control lines from Shift Registers

Brief introduction

General

1. Playback Mode
   Signal from the playback head Deck A or Deck B is selected and fed through by the Mode Selector IC7710 (HEF4952BT). The signal is amplified by amplifier IC7720 (AN7323S) before feeding to the IC7740 (HEF4952BT) and out to the AF Board via connector 1701.

2. Recording Mode
   Recording Signal is selected and fed through by the Mode Selector IC7710 (HEF4952BT) which is then amplified by the amplifier IC7720 (AN7323S). The amplified output signal will pass through IC7730 (HEF4952BT) for record equalization and back to IC7710 (HEF4952BT) before registered into the Rec/PB Head of Deck B.

3. Dubbing Mode
   In Dubbing mode, signal from the playback head Deck A is selected and fed through by the Mode Selector IC7710 (HEF4952BT) which is then equalised for playback mode by the amplifier IC7720 (AN7323S) so that a flat response is obtained after the pre-amp. The equalised signal will then follow the same path as in the Recording mode.

4. Mode Selector
   The Mode Selector IC7710 (HEF4952BT) caters for 4 inputs signal, namely Playback Signal from Deck A, Playback Signal from Deck B, Recording Signal and Dubbing Signal.

5. Amplifier PB/REC
   Amplifier IC7720 (AN7323S) is for the purpose of amplifying the Playback and Recording signal from the Mode Selector.

6. Automatic Level Control (ALC)
   ALC circuit consists of resistors (3760, 3765, 3766, 3767), capacitors (2762 , 2763) and control by transistor 7787 (BC847B). ALC limits the amplifier output to a constant value when input signal becomes too large, thus limiting recording current to below saturation level, to prevent recording distortion.

7. Muting Circuit (For Non-Dolby version only)
   Switch S4 of the IC7740 (HEF4952BT) is for the purpose of muting the output during Recording mode. During Recording mode, S4 is closed and shorted to the ground.

8. IC7740 (HEF4952BT)
   The function of the IC7740 (HEF4952BT) is to change time constant between 120us Ferro (IEC I) and 70us Chrome (IEC II) during playback mode. It will automatically determined whether the tape type is 120us Ferro (IEC I) or 70us Chrome (IEC II). This IC will switch to Flat Gain during the Recording mode.

9. IC7730 (HEF4952BT)
   The function of the IC7730 (HEF4952BT) is to change gain and time constant according to tape type and recording speed to boost recording current at higher frequency during recording to compensate for head loss. It will automatically determined whether the tape type is 120us Ferro (IEC I) or 70us Chrome (IEC II).

10. Bias Level
    Bias Level making use of the Variable resistor (3773) for adjusting the optimal level of the bias current for Ferro or Chrome.

11. Bias Symm (For Dolby B NR version only)
    Bias Symm making use of the Variable resistor (3785) to adjust the bias current for the left and the right channel to be equal.

12. PB Switch
    Playback Switch which consists of the FETs 7785 (For Dolby B NR version only) & 7786 (J111) is for the purpose of providing a virtual ground for the Rec/PB Head (Deck B) during Playback mode. During the Playback mode, the FETs are turn on and shorted pin 2 and 4 of connector 1720 to the ground. During Recording mode, the FETs are turn off to allow the oscillator signal to be superposition onto the Recording signal for recording.

13. Motor Speed (For FR versions only)
    During High speed dubbing, a feedback signal from the uP through pin 03 of the IC7610 (HEF4094BT) will trigger the transistors 7622 (BC847B) and 7616 (BC857B) to cause a change in the voltage level between High and Low, thus changing the speed of the motor.

14. IC7610 (HEF4094BT)
    IC7610 (HEF4094BT) is a Shift Register use for issues the logic for cmos switch ICs (HEF4952BT) via 1A0, 2A1 and 2A2. It also issues logic to On/Off SOL_A, SOL_B and MOT. Recording speed is controlled via NS/HS.

Dolby Circuit (For sets with Dolby B NR version only)

15. IC7630 (CXA1551M)
    IC7630 (CXA1551M) in the Dolby circuit is a Dolby Noise Reduction Type B IC for the Playback and Recording signal. Noise Reduction ON/OFF are controlled by $\overline{\text{DOLBY}}$, which is from CLK, direct from uP. After clocking in DATA, CLK is set to HIGH/LOW for NR OFF/ON.

16. 19kHz Filter
    The 19kHz filters 5631 & 5632 (LXD-210) in the Dolby circuit is for the purpose of filtering the 19kHz Pilot Tone (for Tuner signal only) of the Recording signal.

17. Level Adjust
    The Variable resistor 3635, 3636,3641 and 3642 in the Dolby circuit is for adjusting the playback level of the Dolby reference (400Hz , 200nWb/m). Transistor 7631, 7632 are ON to enable adjustment of 3641, 3642 during Playback Deck A. Transistor 7633, 7634 and 3635, 3636 are active for Playback Deck B.

18. Amplifier IC7640 (NJM4560M)
    The Amplifiers 7640A & 7640B (NJM4560M) in the Dolby circuit is for the purpose of amplified the Recording signal.

19. Muting Circuit
    The muting circuit which consists of transistors 7788, 7789 and 7790 (BC847B) is for the purpose of muting the output during Recording mode.

NOTATIONS & ABBREVIATIONS USED IN THIS DOCUMENT

CR	Chrome (IEC type II)
DB	Dolby NR type B
DD	Double Deck
DM	Double Motor
FE	Ferro (IEC type I)
FF	Non-Autoreverse
FR	Autoreverse Deck B
Gnd x	Ground x
HSD	High speed dubbing
ND	Non Dolby
NR	Noise Reduction
NSD	Normal speed dubbing
PB	Playback
REC	Record
S/A	Sub-assy
SD	Single Deck
SM	Single Motor

CONNECTORS ASSIGNMENTS:

CONNECTOR 1701 — INTERCONNECTION TO AF BOARD

○	1	REC-L	Record input left
○	2	REC-R	Record input right
○	3	GND A	AF Ground
○	4	TAPE-L	Playback output left
○	5	+12V	D.C. supply (+12V) for AF electronics
○	6	TAPE-R	Playback output right
○	7	-CMOS	Negative d.c. supply (-9V) for CMOS ICs

CONNECTOR 1703 — INTERCONNECTION TO AF BOARD

○	1	GND M	Motor Ground
○	2	+MOTOR	D.C. supply (+12V) for tape deck motor & solenoid

CONNECTOR 1706 — INTERCONNECTION TO FRONT BOARD

○	1	AD2	Deck sensing switches output voltage / Deck A EOT
○	2	AD1	Deck sensing switches output voltage / Deck B EOT
○	3	+5V	DC supply +5V for ADC network
○	4	GND P	Control & Oscillator Ground
○	5	CLK	HEF4094BT shift register Clock line
○	6	DATA	HEF4094BT shift register Data line
○	7	STROBE	HEF4094BT shift register Strobe line

CONNECTOR 1710 — DECK B HEADS CONNECTON *(For Non-Dolby version only)*

○	1	B R/P HD L+	R/P Head left channel positive
○	2	GND A	R/P Head return ground
○	3	B R/P HD R+	R/P Head right channel positive
○	4	ERASE HEAD	Erase Head
○	5	GND A	Erase Head ground

CONNECTOR 1720 — DECK B HEADS CONNECTON *(For Dolby B NR version only)*

○	1	B R/P HD L+	R/P Head left channel positive
○	2	B R/P HD L-	R/P Head left channel negative
○	3	B R/P HD R+	R/P Head right channel positive
○	4	B R/P HD R-	R/P Head right channel negative
○	5	ERASE HEAD	Erase Head
○	6	GND A	Erase Head ground

CONNECTOR 1730 — DECK A HEAD CONNECTIONS *(For Double Deck versions only)*

○	1	A PB HD L+	Pb Head left channel positive
○	2	GND A	Pb Head return ground shield
○	3	A PB HD R+	Pb Head right channel positive

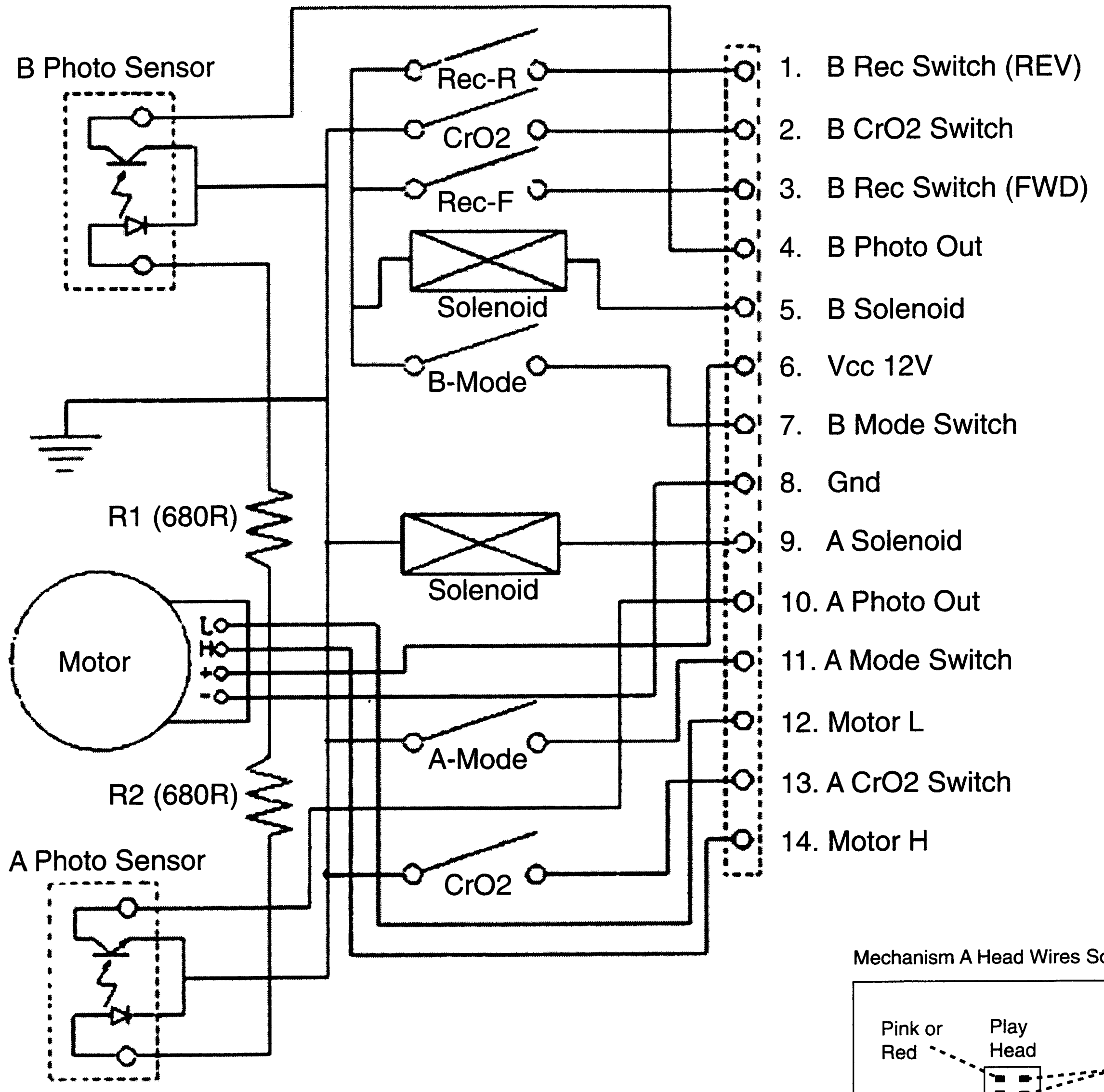
CONNECTOR 1740 — DECK A & B CONTROL INTERFACE *(For Dolby B NR version only)*

○	1	REC REW	Record tab protection status switch (reverse)	[open=on: close=off]
○	2	CrO2 B	Chrome tape detection switch deck B	[open=Cr: close=Fe]
○	3	REC FWD	Record tab protection status switch (forward)	[open=on: close=off]
○	4	PHOTO B	Photo sensor output (tape movement indication)	
○	5	SOL B	Solenoid supply for deck B	
○	6	Vcc	Deck / Motor supply	
○	7	MODE B	Mode switch (head engagement)	[open=off: close=engaged]
○	8	GND M	Deck / Motor ground	
○	9	SOL A	Solenoid supply for deck A	
○	10	PHOTO A	Photo sensor output (tape movement indication)	
○	11	MODE A	Mode switch (head engagement)	[open=off: close=engaged]
○	12	L	L pin for motor	
○	13	CrO2 A	Chrome tape detection switch deck A	[open=Cr: close=Fe]
○	14	H	H pin for motor	

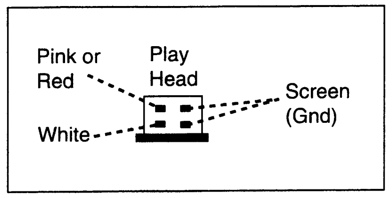
CONNECTOR 1770 — DECK A & B CONTROL INTERFACE *(For Non-Dolby version only)*

○	1	REC REW	Record tab protection status switch (reverse)	[open=on: close=off]
○	2	CrO2 B	Chrome tape detection switch deck B	[open=Cr: close=Fe]
○	3	REC FWD	Record tab protection status switch (forward)	[open=on: close=off]
○	4	PHOTO B	Photo sensor output (tape movement indication)	
○	5	SOL B	Solenoid supply for deck B	
○	6	Vcc	Deck / Motor supply	
○	7	MODE B	Mode switch (head engagement)	[open=off: close=engaged]
○	8	GND M	Deck / Motor ground	
○	9	SOL A	Solenoid supply for deck A	
○	10	PHOTO A	Photo sensor output (tape movement indication)	
○	11	MODE A	Mode switch (head engagement)	[open=off: close=engaged]
○	12	L	L pin for motor	
○	13	CrO2 A	Chrome tape detection switch deck A	[open=Cr: close=Fe]
○	14	H	H pin for motor	

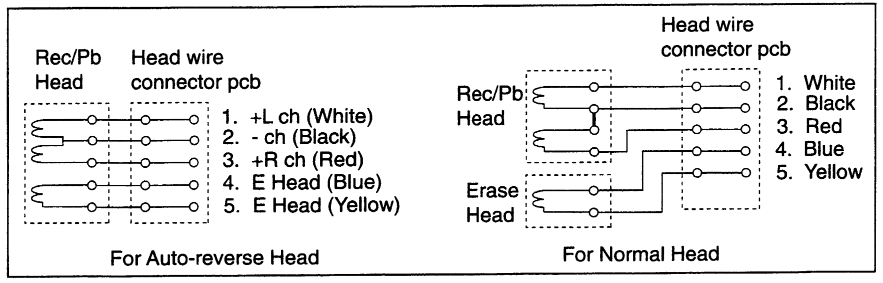
TAPE MECHANISM ELECTRONICS


B Photo Sensor
Rec-R
CrO2
Rec-F
Solenoid
B-Mode
R1 (680R)
Solenoid
Motor
L
H
+
-
A-Mode
R2 (680R)
A Photo Sensor
CrO2
1. B Rec Switch (REV)
2. B CrO2 Switch
3. B Rec Switch (FWD)
4. B Photo Out
5. B Solenoid
6. Vcc 12V
7. B Mode Switch
8. Gnd
9. A Solenoid
10. A Photo Out
11. A Mode Switch
12. Motor L
13. A CrO2 Switch
14. Motor H

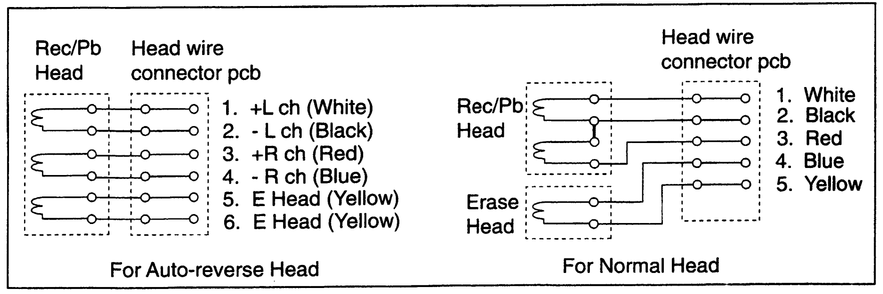
Mechanism A Head Wires Soldering


Pink or Red
Play Head
Screen (Gnd)
White

Mechanism B Head Wires Soldering (Non-Dolby version)


Rec/Pb Head
Head wire connector pcb
1. +L ch (White)
2. - ch (Black)
3. +R ch (Red)
4. E Head (Blue)
5. E Head (Yellow)
For Auto-reverse Head
Rec/Pb Head
Erase Head
Head wire connector pcb
1. White
2. Black
3. Red
4. Blue
5. Yellow
For Normal Head

Mechanism B Head Wires Soldering (Dolby B NR version)


Rec/Pb Head
Head wire connector pcb
1. +L ch (White)
2. - L ch (Black)
3. +R ch (Red)
4. - R ch (Blue)
5. E Head (Yellow)
6. E Head (Yellow)
For Auto-reverse Head
Rec/Pb Head
Erase Head
Head wire connector pcb
1. White
2. Black
3. Red
4. Blue
5. Yellow
For Normal Head

General

	TEST CASSETTE	RECORDER MODE	MEASURE ON	READ ON	ADJUST with	ADJUST to
ADJUST MOTOR SPEED						
HIGH SPEED	SBC420 (4822 397 30071) 3150Hz	DUBBING	1 or 2 LEFT RIGHT	frequency counter	3622 *	5040Hz ± 0.5%
NORMAL SPEED		PLAY B			3620	3150Hz ± 0.5%
		PLAY A			check	3150Hz -0.8/+1.8%
CHECK WOW & FLUTTER						
DECK A & B	SBC420 (4822 397 30071) 3150Hz	PLAY	1 or 2 LEFT RIGHT	W&F-meter	check only	≤0.4 % DIN or ≤0.35 % CCIR *
ADJUST AZIMUTH						
DECK A & B	SBC420 (4822 397 30071) 10kHz	PLAY FWD	1 or 2 LEFT RIGHT	mV-meter	left hand screw	max. output level & left=right
		PLAY REV #			right hand screw	

Playback

	TEST CASSETTE	RECORDER MODE	MEASURE ON	READ ON	ADJUST with	ADJUST to
ADJUST DOLBY PLAYBACK LEVEL *						
DECK A	TCC-130 (4822 397 30269) 200nWb/m	PLAY	7 or 8 LEFT RIGHT	mV-meter	3641(L), 3642(R)	548mV ±0.5dB
DECK B		PLAY FWD			3635(L), 3636(R)	
		PLAY REV #			Check	548mV ±1dB
CHECK PLAYBACK FREQUENCY RESPONSE						
PB. FREQ. RESP.	SBC420 (4822 397 30071)	PLAY	1 or 2 LEFT RIGHT	mV-meter	Check	limits see fig.1

* For Dolby version only

# For Auto-reverse version only

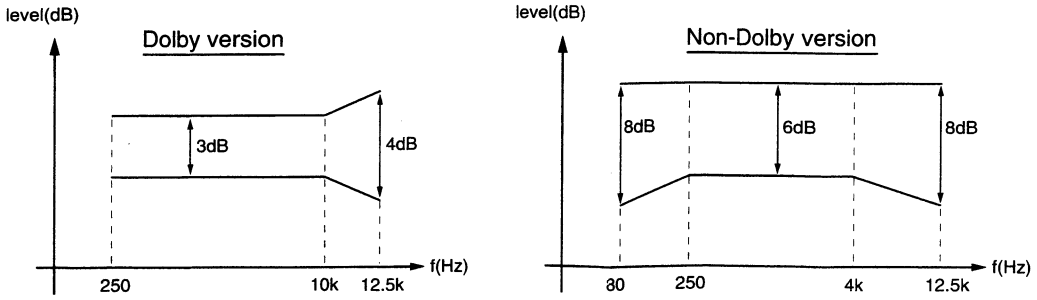


figure. 1

Rec

PRE

DEC

CHE

Inject
100H
10kH
via <

Injec
via <

Rem

ADJ

Injec
via <

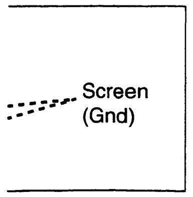
Rem

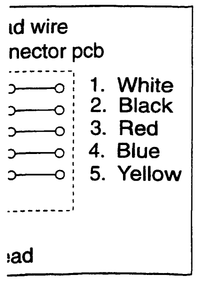
* Fo

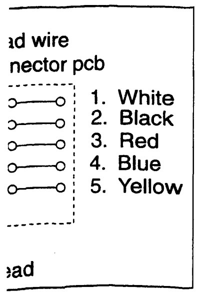
V)

/D)

ires Soldering







General

	TEST CASSETTE	RECORDER MODE	MEASURE ON	READ ON	ADJUST with	ADJUST to
ADJUST MOTOR SPEED						
HIGH SPEED	SBC420 (4822 397 30071) 3150Hz	DUBBING	1 or 2 LEFT RIGHT	frequency counter	3622 *	5040Hz ± 0.5%
NORMAL SPEED		PLAY B			3620	3150Hz ± 0.5%
		PLAY A			check	3150Hz -0.8/+1.8%
CHECK WOW & FLUTTER						
DECK A & B	SBC420 (4822 397 30071) 3150Hz	PLAY	1 or 2 LEFT RIGHT	W&F-meter	check only	≤0.4 % DIN or ≤0.35 % CCIR *
ADJUST AZIMUTH						
DECK A & B	SBC420 (4822 397 30071) 10kHz	PLAY FWD	1 or 2 LEFT RIGHT	mV-meter	left hand screw	max. output level & left=right
		PLAY REV #			right hand screw	

Playback

	TEST CASSETTE	RECORDER MODE	MEASURE ON	READ ON	ADJUST with	ADJUST to
ADJUST DOLBY PLAYBACK LEVEL *						
DECK A	TCC-130 (4822 397 30269) 200nWb/m	PLAY	7 or 8 LEFT RIGHT	mV-meter	3641(L), 3642(R)	548mV ±0.5dB
DECK B		PLAY FWD			3635(L), 3636(R)	
		PLAY REV #			Check	548mV ±1dB
CHECK PLAYBACK FREQUENCY RESPONSE						
PB. FREQ. RESP.	SBC420 (4822 397 30071)	PLAY	1 or 2 LEFT RIGHT	mV-meter	Check	limits see fig.1

* For Dolby version only
# For Auto-reverse version only

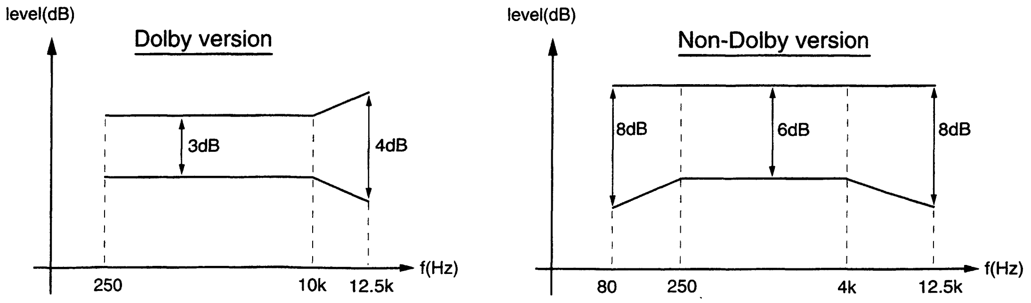


figure. 1

Recording

	TEST CASSETTE	RECORDER MODE	MEASURE ON	READ ON	ADJUST with	ADJUST to
PRE-ADJUST BIAS AND BIAS-SYMMETRY						
DECK B	CrO 2	RECORD	5 or 6 LEFT RIGHT	mV-meter	3773	995mV
					3785 *	left = right
	FERRO				check only	750mV ± 1.5dB
CHECK OVERALL FREQUENCY RESPONSE AND DISTORTION						
Inject 3mV signals 100Hz, 250Hz, 1kHz, 10kHz, 12.5kHz via 3 or 4	CrO 2	RECORD				
	RECORDED CASSETTE	PLAY	1 or 2 LEFT RIGHT	mV-meter	check only	limits see fig.2
Inject 1kHz 8.85mV via 3 or 4	CrO 2	RECORD				
	RECORDED CASSETTE	PLAY	1 or 2 LEFT RIGHT	THD-meter	check only	≤3%
Remark: If high frequencies are not within limits, decrease bias and re-measure. If distortion is too high increase bias and re-measure.						
ADJUST DOLBY RECORD LEVEL *						
Inject 400Hz 8.85mV via 3 or 4	CrO 2	RECORD	9 or 10 LEFT RIGHT	mV-meter	3655 & 3556	420mV
	RECORDED CASSETTE	PLAY	7 or 8 LEFT RIGHT	mV-meter	check	170mV ± 1dB
Remark: If measured value is out, re-adjust record level up or down slightly to attain play level.						

* For Dolby version only

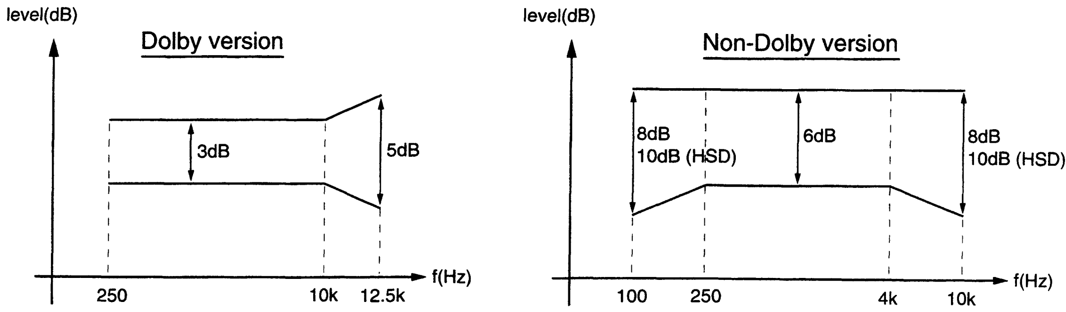
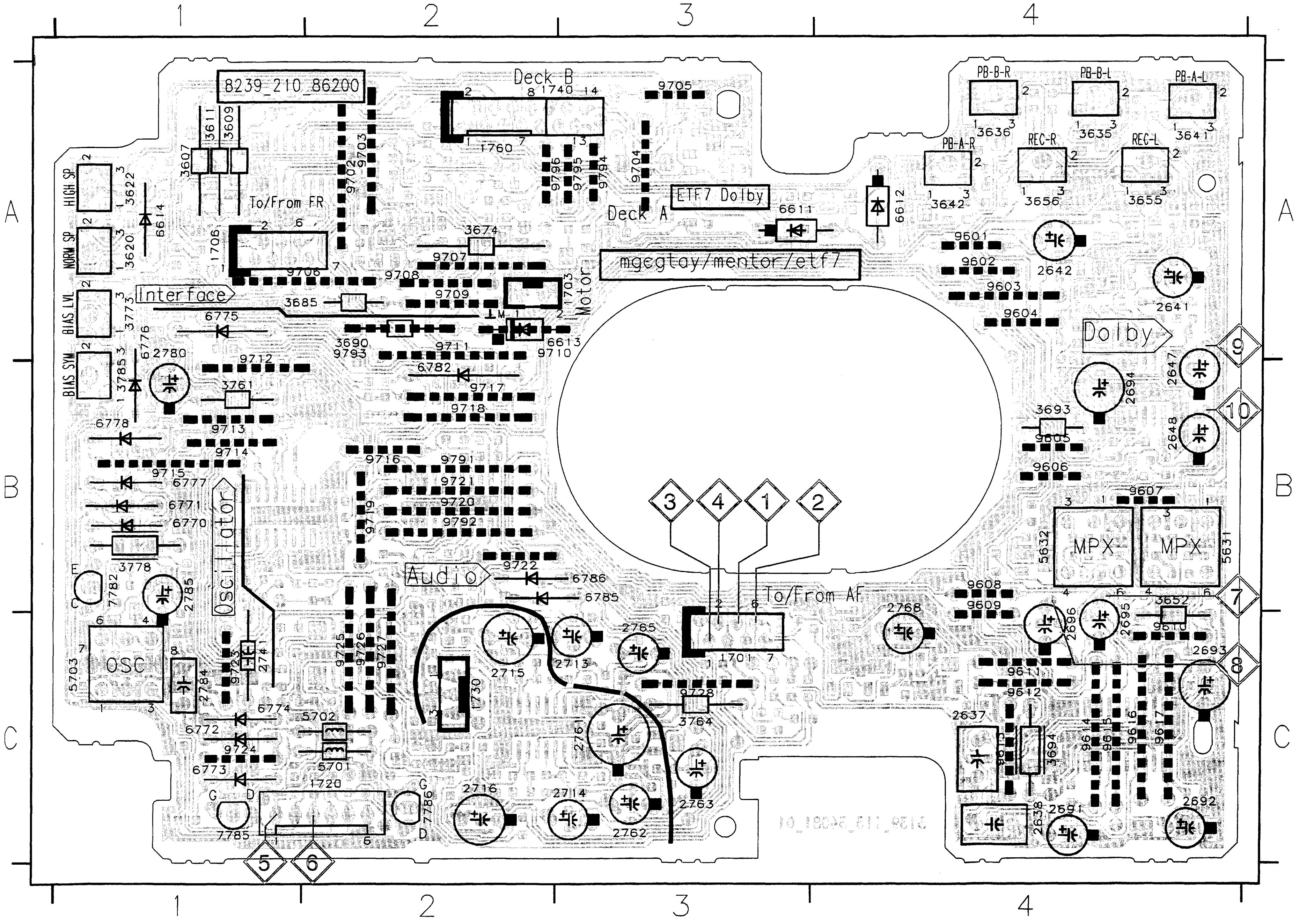


figure. 2

COMPONENT LAYOUT

1701	C3	2647	B4	2716	C2	3609	A1	3674	A2	5632	B4	6773	C1	7786	C2	9611	C4	9706	A1	9717	B2	9728	C3
1703	A3	2648	B4	2741	C1	3611	A1	3685	A1	5701	C2	6774	C1	9601	A4	9612	C4	9707	A2	9718	B2	9791	B2
1706	A1	2691	C4	2761	C3	3620	A1	3690	A2	5702	C2	6775	A1	9602	A4	9613	C4	9708	A2	9719	B2	9792	B2
1720	C2	2692	C4	2762	C3	3622	A1	3693	B4	5703	C1	6776	A1	9603	A4	9614	C4	9709	A2	9720	B2	9793	A2
1730	C2	2693	C4	2763	C3	3635	A4	3694	C4	6611	A3	6777	B1	9604	A4	9615	C4	9710	A2	9721	B2	9794	A3
1740	A2	2694	B4	2765	C3	3636	A4	3761	B1	6612	A4	6778	B1	9605	B4	9616	C4	9711	A2	9722	B2	9795	A3
1760	A2	2695	C4	2768	B4	3641	A4	3764	C3	6613	A3	6782	B2	9606	B4	9617	C4	9712	A1	9723	C1	9796	A2
2637	C4	2696	C4	2780	A1	3642	A4	3773	A1	6614	A1	6785	B3	9607	B4	9702	A2	9713	B1	9724	C1		
2638	C4	2713	C3	2784	C1	3652	B4	3778	B1	6770	B1	6786	B3	9608	B4	9703	A2	9714	B1	9725	C2		
2641	A4	2714	C3	2785	B1	3655	A4	3785	B1	6771	B1	7782	B1	9609	B4	9704	A3	9715	B1	9726	C2		
2642	A4	2715	C2	3607	A1	3656	A4	5631	B4	6772	C1	7785	C1	9610	C4	9705	A3	9716	B2	9727	C2		


1
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3
4
A
B
C
8239_210_86200
Deck B
1740
1760
Deck A
ETF7 Dolby
mgcgtay/mentor/etf7
HIGH SP
NORM SP
BIAS LVL
BIAS SYM
To/From FR
Interface
Motor
Oscillator
OSC
Audio
To/From AF
1701
1720
PB-B-R
PB-B-L
PB-A-L
PB-A-R
REC-R
REC-L
Dolby
MPX
MPX
5632
5631
3
4
1
2
5
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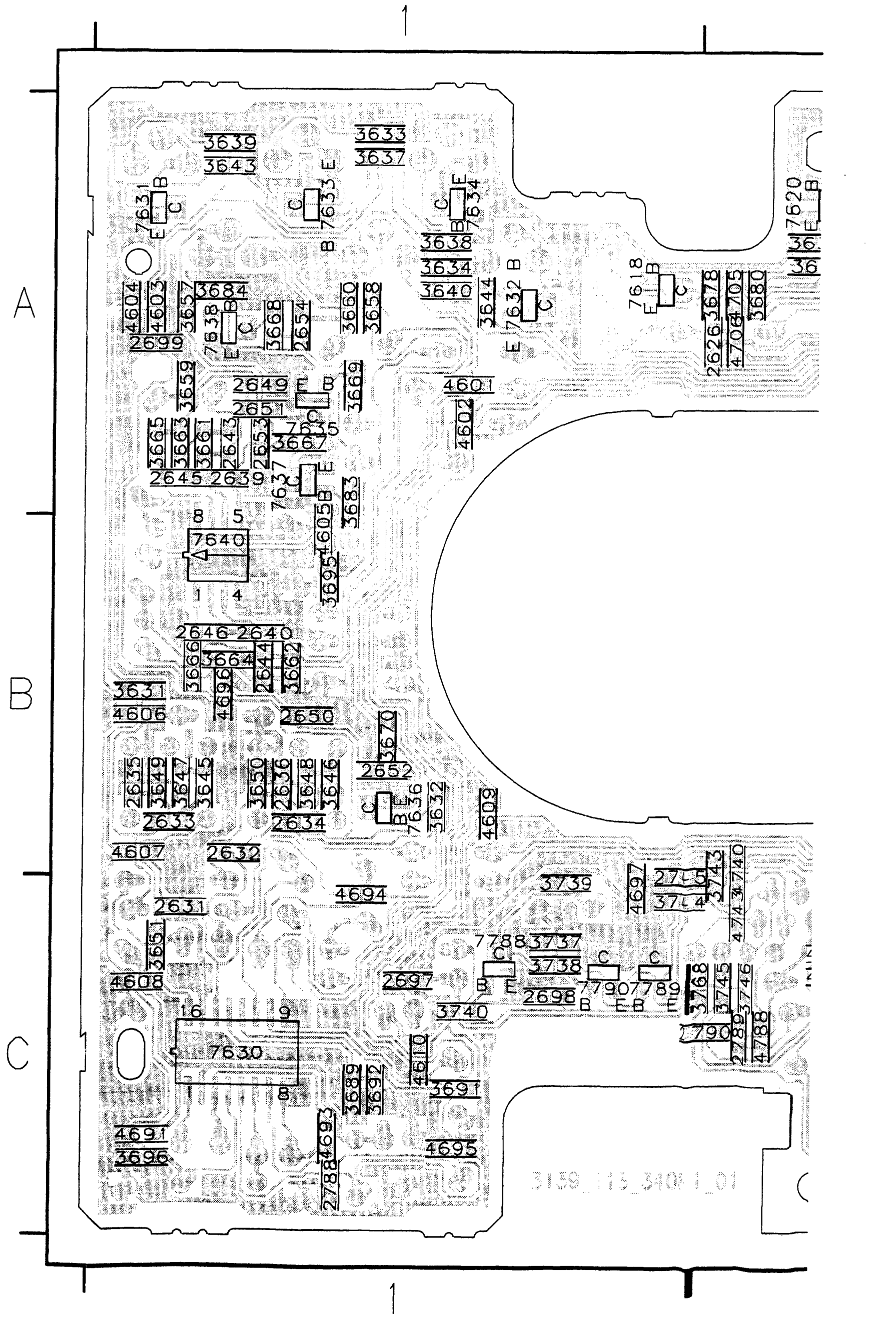
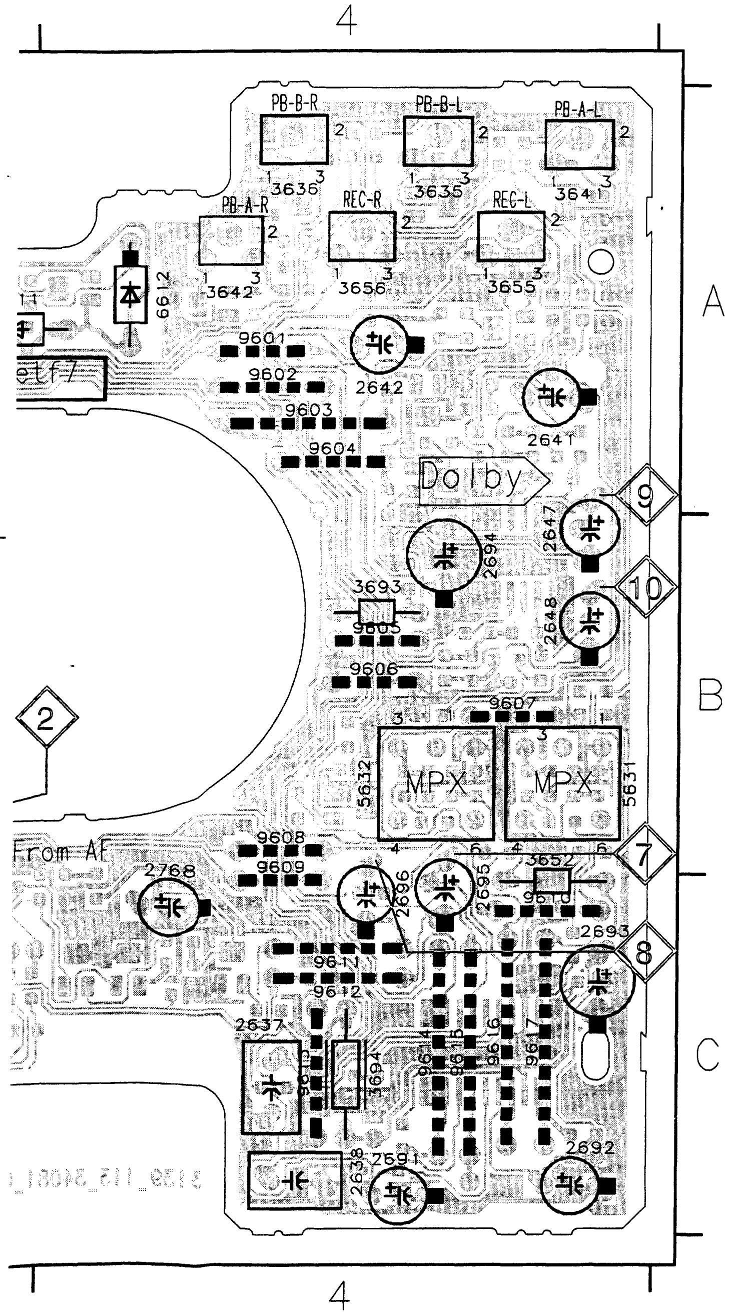
10
3139_115_34011_01

CHIP LAYOUT

2621	A3	2699	A1	2742	B4	3616	A4	3657	A1
2622	A4	2701	C4	2743	C4	3618	A4	3658	A1
2623	A4	2702	C3	2744	B3	3619	A4	3659	A1
2624	A3	2703	C3	2745	B1	3623	A2	3660	A1
2625	A4	2704	C3	2746	C4	3624	A2	3661	A1
2626	A2	2705	C3	2760	B4	3625	A2	3662	B1
2631	C1	2706	C3	2769	B2	3626	A2	3663	A1
2632	B1	2707	C3	2770	B2	3628	A2	3664	B1
2633	B1	2708	C3	2781	C4	3630	A2	3665	A1
2634	B1	2709	C3	2782	B4	3631	B1	3666	B1
2635	B1	2710	C3	2786	C4	3632	B1	3667	A1
2636	B1	2711	C2	2787	C4	3633	A1	3668	A1
2639	A1	2712	C2	2788	C1	3634	A1	3669	A1
2640	B1	2717	B3	2789	C2	3637	A1	3670	B1
2643	A1	2718	B4	2790	C2	3638	A1	3672	A4
2644	B1	2719	B4	3601	A3	3639	A1	3676	A3
2645	A1	2720	B4	3602	A3	3640	A1	3678	A2
2646	B1	2727	C4	3603	A3	3643	A1	3679	A2
2649	A1	2728	B3	3604	A3	3644	A1	3680	A2
2650	B1	2729	B3	3605	A3	3645	B1	3683	A1
2651	A1	2730	B3	3606	A3	3646	B1	3684	A1
2652	B1	2733	C2	3608	A4	3647	B1	3686	A4
2653	A1	2734	C2	3610	A4	3648	B1	3687	A3
2654	A1	2735	C3	3612	A4	3649	B1	3689	C1
2697	C1	2737	C2	3613	A3	3650	B1	3691	C1
2698	C1	2738	C2	3614	A4	3651	C1	3692	C1


1
A
B
C
7640
7630
3159_115_34011_01

6	C2	9611	C4	9706	A1	9717	B2	9728	C3
1	A4	9612	C4	9707	A2	9718	B2	9791	B2
2	A4	9613	C4	9708	A2	9719	B2	9792	B2
3	A4	9614	C4	9709	A2	9720	B2	9793	A2
4	A4	9615	C4	9710	A2	9721	B2	9794	A3
5	B4	9616	C4	9711	A2	9722	B2	9795	A3
6	B4	9617	C4	9712	A1	9723	C1	9796	A2
7	B4	9702	A2	9713	B1	9724	C1		
8	B4	9703	A2	9714	B1	9725	C2		
9	B4	9704	A3	9715	B1	9726	C2		
0	C4	9705	A3	9716	B2	9727	C2		



4
PB-B-R
PB-B-L
PB-A-L
3636
3635
3641
PB-A-R
REC-R
REC-L
3642
3656
3655
6612
9601
2642
9602
9603
2641
9604
Dolby
9
2647
2694
10
3693
9605
2648
9606
9607
2
MPX
MPX
5632
5631
From AF
9608
9609
2768
2696
2695
3652
9610
7
2693
8
9611
9612
2637
3694
9613
9614
9615
9616
9617
2638
2691
2692
A
B
C
4

CHIP LAYOUT

2621	A3	2699	A1	2742	B4	3616	A4	3657	A1	3695	B1	3727	B3	3755	A3	3786	A4	4707	A4	4733	C3	7623	A3
2622	A4	2701	C4	2743	C4	3618	A4	3658	A1	3696	C1	3728	B3	3756	A3	3787	A4	4708	A4	4734	C3	7624	A4
2623	A4	2702	C3	2744	B3	3619	A4	3659	A1	3701	C4	3729	B3	3757	A3	3788	C4	4709	A4	4735	C2	7630	C1
2624	A3	2703	C3	2745	B1	3623	A2	3660	A1	3702	C3	3730	B3	3758	A3	3789	B4	4710	B4	4736	C3	7631	A1
2625	A4	2704	C3	2746	C4	3624	A2	3661	A1	3703	C3	3731	B3	3759	A3	4601	A1	4711	A4	4737	C3	7632	A1
2626	A2	2705	C3	2760	B4	3625	A2	3662	B1	3704	C3	3732	B3	3760	B3	4602	A1	4712	B4	4738	C3	7633	A1
2631	C1	2706	C3	2769	B2	3626	A2	3663	A1	3705	C3	3733	B3	3762	B4	4603	A1	4713	A4	4739	C3	7634	A1
2632	B1	2707	C3	2770	B2	3628	A2	3664	B1	3706	C3	3734	C3	3763	C2	4604	A1	4714	A3	4740	B2	7635	A1
2633	B1	2708	C3	2781	C4	3630	A2	3665	A1	3707	C3	3735	C3	3765	C2	4605	B1	4715	B3	4741	C2	7636	B1
2634	B1	2709	C3	2782	B4	3631	B1	3666	B1	3708	C3	3736	C3	3766	C2	4606	B1	4716	B3	4742	C2	7637	A1
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2640	B1	2717	B3	2789	C2	3637	A1	3670	B1	3712	C3	3740	C1	3770	B4	4610	C1	4720	B3	4785	A3	7720	C3
2643	A1	2718	B4	2790	C2	3638	A1	3672	A4	3713	C2	3741	C3	3771	B4	4691	C1	4721	B3	4786	A4	7730	B4
2644	B1	2719	B4	3601	A3	3639	A1	3676	A3	3714	C2	3742	C2	3772	A4	4693	C1	4722	B3	4787	B4	7740	B3
2645	A1	2720	B4	3602	A3	3640	A1	3678	A2	3715	C2	3743	B2	3774	B4	4694	C1	4723	B4	4788	C2	7780	A4
2646	B1	2727	C4	3603	A3	3643	A1	3679	A2	3716	C2	3744	C1	3775	C4	4695	C1	4724	B3	7610	A4	7781	B4
2649	A1	2728	B3	3604	A3	3644	A1	3680	A2	3717	B3	3745	C2	3776	B4	4696	B1	4725	B3	7612	A2	7783	B4
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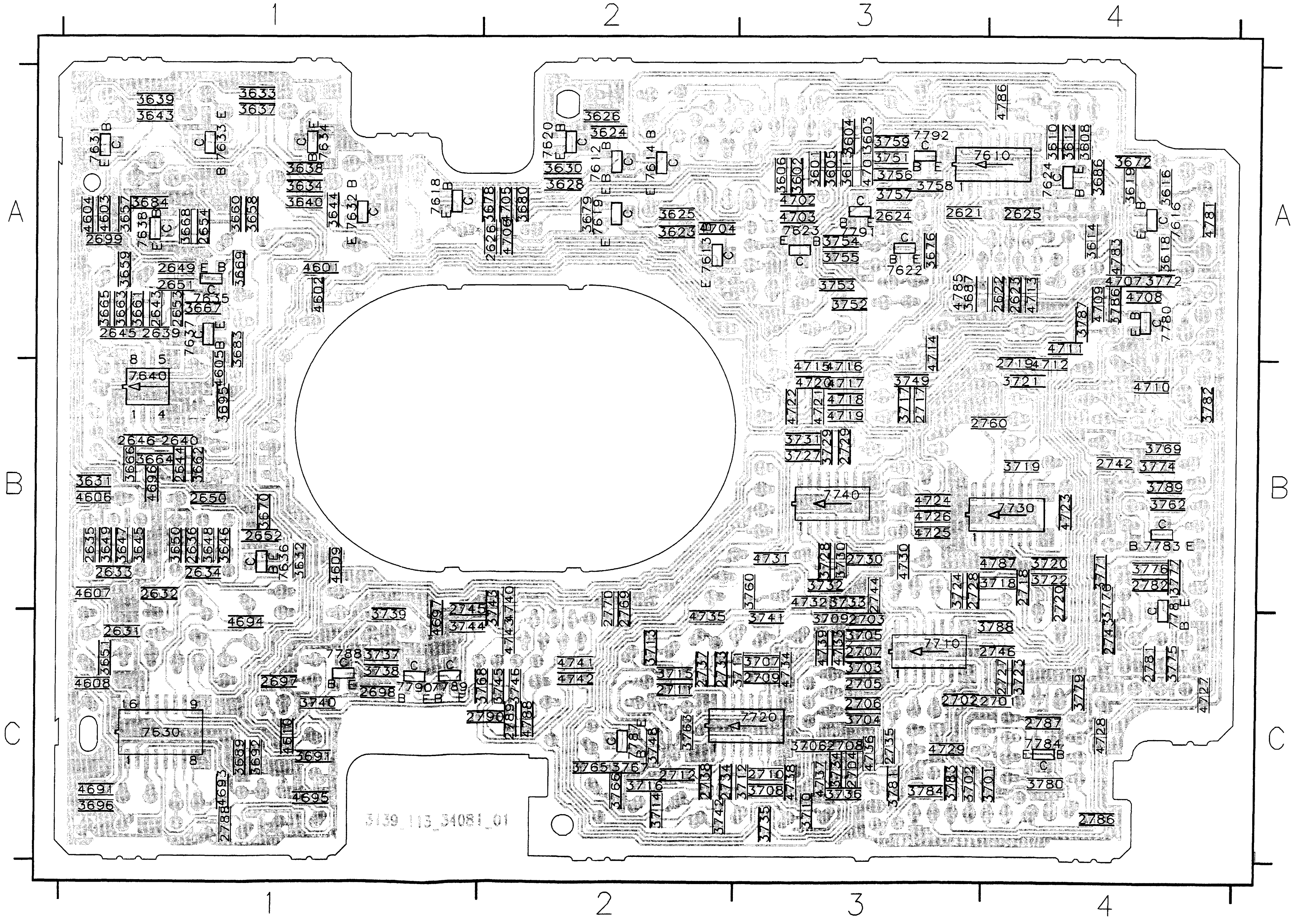
2651	A1	2730	B3	3606	A3	3646	B1	3684	A1	3719	B4	3748	C2	3779	C4	4701	A3	4727	C4	7614	A2	7787	C2
2652	B1	2733	C2	3608	A4	3647	B1	3686	A4	3720	B4	3749	B3	3780	C4	4702	A3	4728	C4	7616	A4	7788	C1
2653	A1	2734	C2	3610	A4	3648	B1	3687	A3	3721	B4	3751	A3	3781	C3	4703	A3	4729	C3	7618	A1	7789	C1
2654	A1	2735	C3	3612	A4	3649	B1	3689	C1	3722	B4	3752	A3	3782	B4	4704	A2	4730	B3	7619	A2	7790	C1
2697	C1	2737	C2	3613	A3	3650	B1	3691	C1	3723	C4	3753	A3	3783	C3	4705	A2	4731	B3	7620	A2	7791	A3
2698	C1	2738	C2	3614	A4	3651	C1	3692	C1	3724	B3	3754	A3	3784	C3	4706	A2	4732	B3	7622	A3	7792	A3



1
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7640
7630
7740
7730
7710
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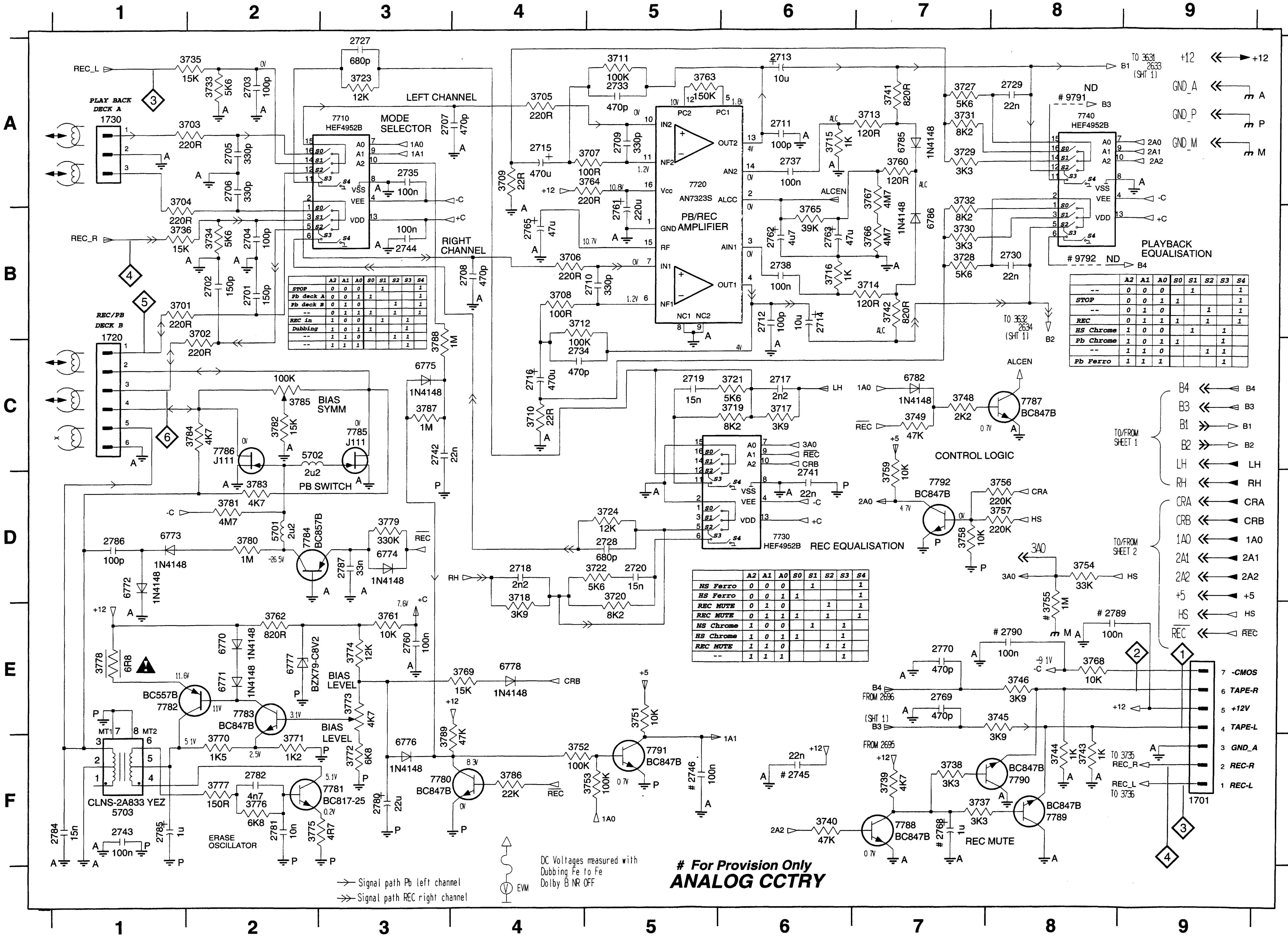
7610
3139 113 34081_01

ANALOG CIRCUIT


1
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A
B
C
D
E
F
REC_L
REC_R
PLAY BACK DECK A
1730
REC/PB DECK B
1720
7710
HEF4952B
MODE SELECTOR
LEFT CHANNEL
RIGHT CHANNEL
7720
AN7323S
PB/REC AMPLIFIER
7730
HEF4952B
REC EQUALISATION
7740
HEF4952B
PLAYBACK EQUALISATION
CONTROL LOGIC
BIAS SYMM
PB SWITCH
BIAS LEVEL
ERASE OSCILLATOR
REC MUTE
CLNS-2A833 YEZ
5703
7786 J111
7785 J111
7784 BC857B
7782 BC557B
7783 BC847B
7781 BC817-25
7780 BC847B
7791 BC847B
7792 BC847B
7787 BC847B
7788 BC847B
7789 BC847B
7790 BC847B
BZX79-C8V2
TO/FROM SHEET 1
TO/FROM SHEET 2
B4
B3
B1
B2
LH
RH
CRA
CRB
1A0
2A1
2A2
+5
HS
REC
+12
GND_A
GND_P
GND_M
7 -CMOS
6 TAPE-R
5 +12V
4 TAPE-L
3 GND_A
2 REC-R
1 REC-L
1701
TO 3631 2633 (SHT 1)
TO 3632 2634 (SHT 1)
FROM 2696
FROM 2695
TO 3735 REC_R
REC_L TO 3736
# 9791 ND
# 9792 ND
EVM
DC Voltages measured with Dubbing Fe to Fe Dolby B NR OFF
→ Signal path Pb left channel
→→ Signal path REC right channel
# For Provision Only
ANALOG CCTRY

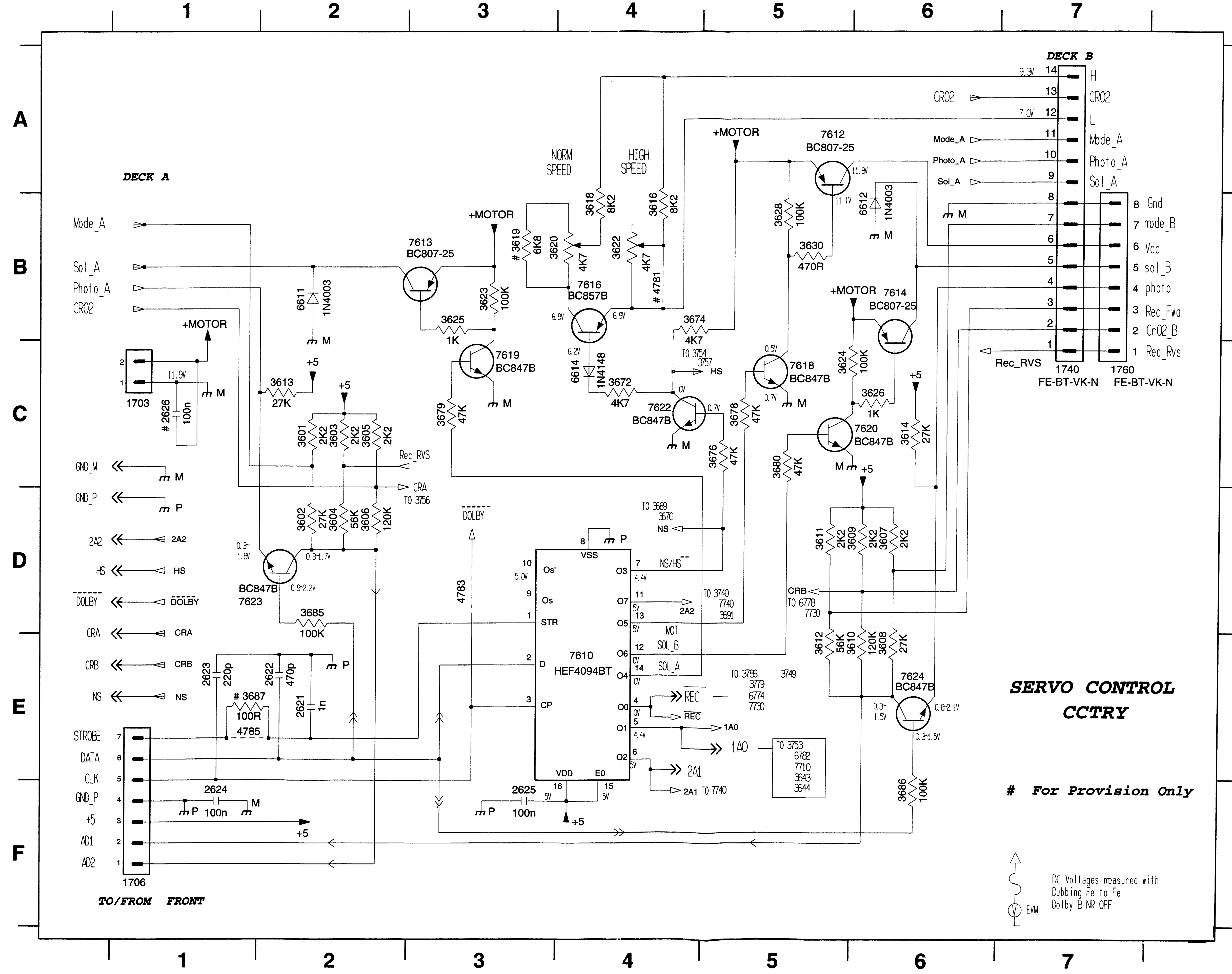
	A2	A1	A0	S0	S1	S2	S3	S4
STOP	0	0	0		1			1
Pb deck A	0	0	1	1				1
Pb deck B	0	1	0			1		1
--	0	1	1	1		1		1
REC in	1	0	0		1		1	
Dubbing	1	0	1	1			1	
--	1	1	0			1	1	
--	1	1	1				1	

	A2	A1	A0	S0	S1	S2	S3	S4
--	0	0	0		1			1
STOP	0	0	1	1				1
--	0	1	0			1		1
REC	0	1	1	1		1		1
HS Chrome	1	0	0		1		1	
Pb Chrome	1	0	1	1			1	
--	1	1	0			1	1	
Pb Ferro	1	1	1				1	

	A2	A1	A0	S0	S1	S2	S3	S4
NS Ferro	0	0	0		1			1
HS Ferro	0	0	1	1				1
REC MUTE	0	1	0			1		1
REC MUTE	0	1	1	1		1		1
NS Chrome	1	0	0		1		1	
HS Chrome	1	0	1	1			1	
REC MUTE	1	1	0			1	1	
--	1	1	1				1	

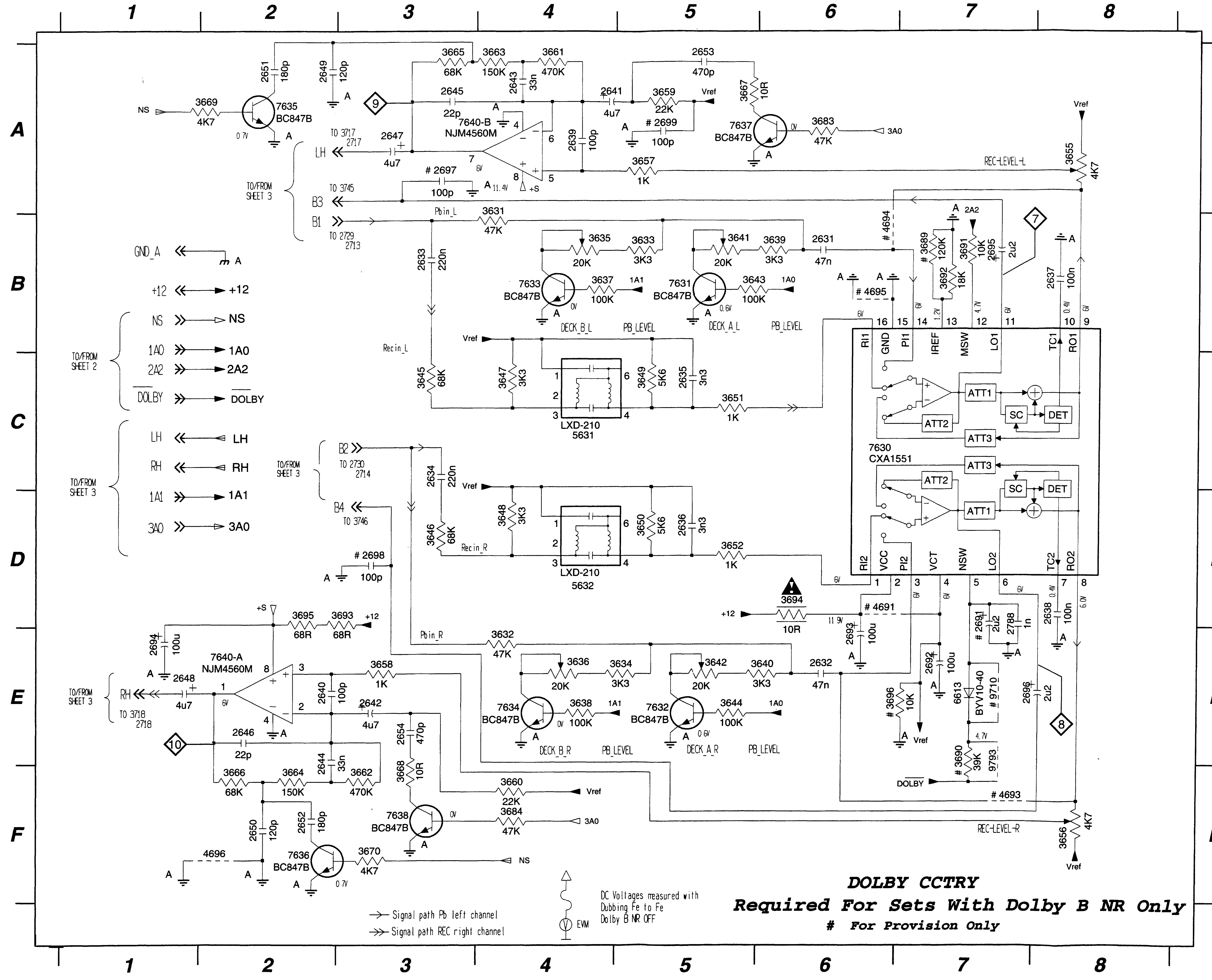
1701	F9	3720	D5	6775	C3
1720	C1	3721	C6	6776	F3
1730	A1	3722	D5	6777	E2
2701	B2	3723	A3	6778	E4
2702	B2	3724	D5	6782	C7
2703	A2	3727	A7	6785	A7
2704	B2	3728	B7	6786	B7
2705	A2	3729	A7	7710	A3
2706	A2	3730	B7	7720	A5
2707	A3	3731	A7	7730	D6
2708	B4	3732	A7	7740	A8
2709	A5	3733	A2	7780	F4
2710	B5	3734	B2	7781	F3
2711	A6	3735	A2	7782	E1
2712	B6	3736	B1	7783	E2
2713	A6	3737	F7	7784	D2
2714	B6	3738	F7	7785	C3
2715	A4	3739	F7	7786	C2
2716	C4	3740	F6	7787	C8
2717	C6	3741	A7	7788	F7
2718	D4	3742	B7	7789	F8
2719	C5	3743	F8	7790	F8
2720	D5	3744	F8	7791	F5
2727	A3	3745	E8	7792	D7
2728	D5	3746	E8	9791	A8
2729	A8	3748	C7	9792	B8
2730	B8	3749	C7		
2733	A5	3751	E5		
2734	C4	3752	F4		
2735	A3	3753	F5		
2737	A6	3754	D8		
2738	B6	3755	E8		
2741	D6	3756	D8		
2742	C3	3757	D8		
2743	F1	3758	D7		
2744	B3	3759	D7		
2745	F6	3760	A7		
2746	F5	3761	E3		
2760	E3	3762	E2		
2761	B5	3763	A5		
2762	B6	3764	A5		
2763	B6	3765	B6		
2765	B4	3766	B7		
2768	F7	3767	A7		
2769	E7	3768	E8		
2770	E7	3769	E4		
2780	F3	3770	F2		
2781	F2	3771	F2		
2782	F2	3772	F3		
2784	F1	3773	E3		
2785	F1	3774	E3		
2786	D1	3775	F2		
2787	D3	3776	F2		
2789	E8	3777	F2		
2790	E8	3778	E1		
3701	B1	3779	D3		
3702	B2	3780	D2		
3703	A2	3781	D2		
3704	A1	3782	C2		
3705	A4	3783	D2		
3706	B4	3784	C2		
3707	A5	3785	C2		
3708	B4	3786	F4		
3709	A4	3787	C3		
3710	C4	3788	C3		
3711	A5	3789	F3		
3712	B4	5701	D2		
3713	A7	5702	C2		
3714	B7	5703	F1		
3715	A6	6770	E2		
3716	B6	6771	E2		
3717	C6	6772	D1		
3718	D4	6773	D1		
3719	C6	6774	D3		

SERVO CONTROL CIRCUIT


DECK A
DECK B
Mode_A
Sol_A
Photo_A
CR02
+MOTOR
1703
11.9V
M
# 2626
100n
3613
27K
+5
6611
1N4003
7613
BC807-25
3625
1K
3623
100K
7619
BC847B
3679
47K
3601 2K2
3603 2K2
3605 2K2
Rec_RVS
CRA
TO 3756
3602 27K
3604 56K
3606 120K
BC847B
7623
3685
100K
NORM SPEED
HIGH SPEED
# 3619 6K8
3620 4K7
3618 8K2
3622 4K7
3616 8K2
# 4781
7616
BC857B
6614
1N4148
3672
4K7
3674
4K7
TO 3754 3757
HS
7622
BC847B
3676
47K
3678
47K
DOLBY
4783
7610
HEF4094BT
Os'
Os
STR
D
CP
VSS
VDD
E0
O3
O7
O5
O6
O4
O0
O1
O2
NS/HS
NS
TO 3669 3670
2A2
TO 3740 7740 3691
MOT
SOL_B
SOL_A
TO 3786 3779 6774 7730
3749
REC
1A0
TO 3753 6782 7710 3643 3644
2A1
2A1 TO 7740
7612
BC807-25
3628
100K
3630
470R
6612
1N4003
7618
BC847B
7614
BC807-25
3624
100K
3626
1K
7620
BC847B
3680
47K
3614
27K
3611 2K2
3609 2K2
3607 2K2
CRB
TO 6778 7730
3612 56K
3610 120K
3608 27K
7624
BC847B
3686
100K
1740
FE-BT-VK-N
1760
FE-BT-VK-N
H
CR02
L
Mode_A
Photo_A
Sol_A
Gnd
mode_B
Vcc
sol_B
photo
Rec_Fwd
Cr02_B
Rec_Rvs
Rec_RVS
GND_M
GND_P
2A2
HS
DOLBY
CRA
CRB
NS
STROBE
DATA
CLK
GND_P
+5
AD1
AD2
1706
2623 220p
2622 470p
2621 1n
# 3687 100R
4785
2624 100n
2625 100n
TO/FROM FRONT
SERVO CONTROL CCTRY
# For Provision Only
DC Voltages measured with Dubbing Fe to Fe Dolby B NR OFF
EVM
1 2 3 4 5 6 7
A B C D E F

1703	C1
1706	F1
1740	C7
1760	C7
2621	E2
2622	E2
2623	E1
2624	F1
2625	F3
2626	C1
3601	C2
3602	D2
3603	C2
3604	D2
3605	C2
3606	D2
3607	D6
3608	E6
3609	D6
3610	E6
3611	D5
3612	E5
3613	C2
3614	C6
3616	B4
3618	B4
3619	B3
3620	B3
3622	B4
3623	B3
3624	C5
3625	B3
3626	C6
3628	B5
3630	B5
3672	C4
3674	B4
3676	C5
3678	C5
3679	C3
3680	C5
3685	D2
3686	F6
3687	E1
4781	B4
4783	D3
4785	E1
6611	B2
6612	B6
6614	C4
7610	E4
7612	A5
7613	B2
7614	B6
7616	B4
7618	C5
7619	C3
7620	C6
7622	C4
7623	D1
7624	E6

DOLBY CIRCUIT


7630
CXA1551
7640-A
NJM4560M
7640-B
NJM4560M
LXD-210
5631
LXD-210
5632
7631 BC847B
7632 BC847B
7633 BC847B
7634 BC847B
7635 BC847B
7636 BC847B
7637 BC847B
7638 BC847B
6613 BYV10-40
TO/FROM SHEET 2
TO/FROM SHEET 3
GND_A
+12
NS
1A0
2A2
DOLBY
LH
RH
1A1
3A0
B1
B2
B3
B4
REC-LEVEL-L
REC-LEVEL-R
DECK_B_L
DECK_A_L
DECK_B_R
DECK_A_R
PB_LEVEL
Pbin_L
Pbin_R
Recin_L
Recin_R
Vref
→ Signal path Pb left channel
→→ Signal path REC right channel
DC Voltages measured with Dubbing Fe to Fe Dolby B NR OFF
EVM

DOLBY CCTRY

Required For Sets With Dolby B NR Only

# For Provision Only

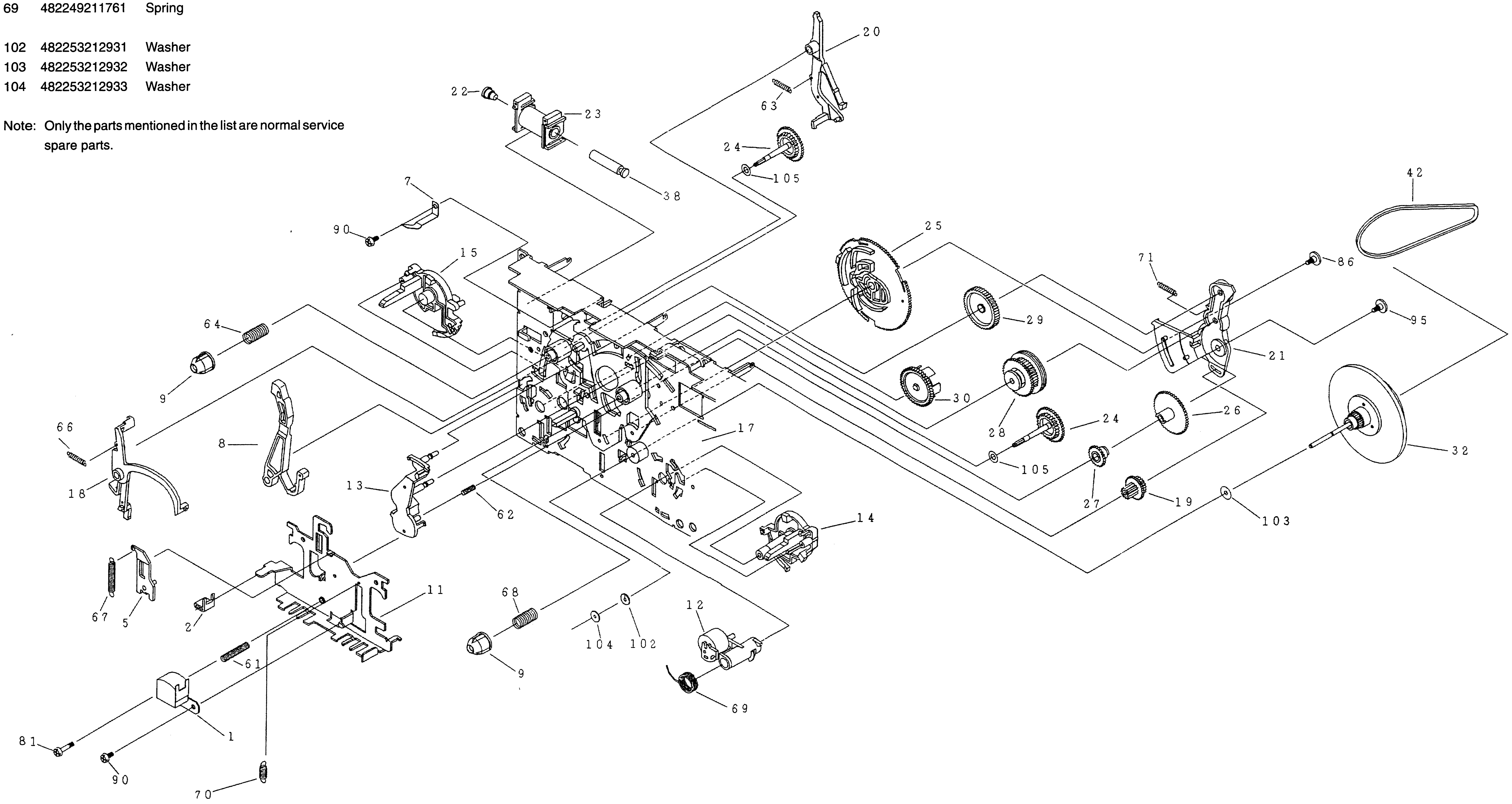
2631	B6
2632	E6
2633	B3
2634	C3
2635	C5
2636	D5
2637	B8
2638	D8
2639	A4
2640	E2
2641	A4
2642	E3
2643	A4
2644	E2
2645	A3
2646	E2
2647	A3
2648	E1
2649	A2
2650	F2
2651	A2
2652	F2
2653	A5
2654	E3
2691	D7
2692	E7
2693	E6
2694	E1
2695	B7
2696	E7
2697	A3
2698	D3
2699	A5
2788	D7
3631	B4
3632	E4
3633	B5
3634	E5
3635	B4
3636	E4
3637	B4
3638	E4
3639	B6
3640	E6
3641	B5
3642	E5
3643	B5
3644	E5
3645	C3
3646	D3
3647	C4
3648	D4
3649	C5
3650	D5
3651	C5
3652	D5
3655	A8
3656	F8
3657	A5
3658	E3
3659	A5
3660	F4
3661	A4
3662	F3
3663	A4
3664	F2
3665	A3
3666	F2
3667	A5
3668	F3
3669	A2
3670	F3
3683	A6
3684	F4
3689	B7
3690	E7
3691	B7
3692	B7
3693	D3
3694	D6
3695	D2
3696	E6
4691	D6
4693	F7
4694	B6
4695	B6
4696	F2
5631	C4
5632	D4
6613	E7
7630	C6
7631	B5
7632	E5
7633	B4
7634	E4
7635	A2
7636	F2
7637	A5
7638	F3
7640-A	E2
7640-B	A4
9710	E7
9793	E7

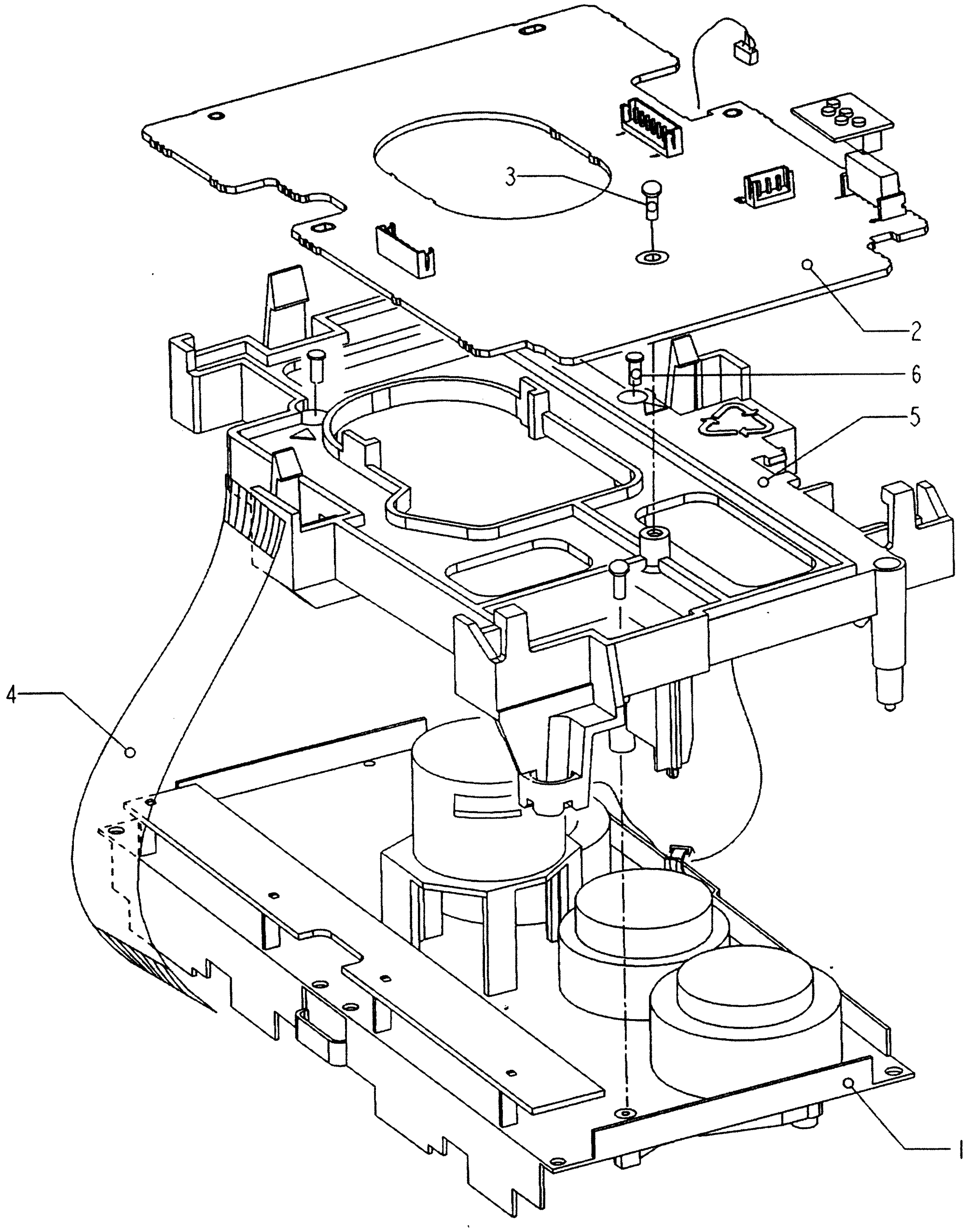
TAPE MECHANISM A - PLAY

MECHANICAL PARTS - PLAY MECHANISM

1	996500002313	Play Head (Non-Autoreverse deck)
1	996500002321	Play Head (Autoreverse deck)
12	482240210972	Pinch Arm Assembly R
23	996500002314	Coil Assembly
32	482252811209	Flywheel Assembly RV
42	996500002315	Belt AF (Autoreverse deck)
42	996500002718	Belt AF (Non-autoreverse deck)
69	482249211761	Spring
102	482253212931	Washer
103	482253212932	Washer
104	482253212933	Washer

Note: Only the parts mentioned in the list are normal service spare parts.

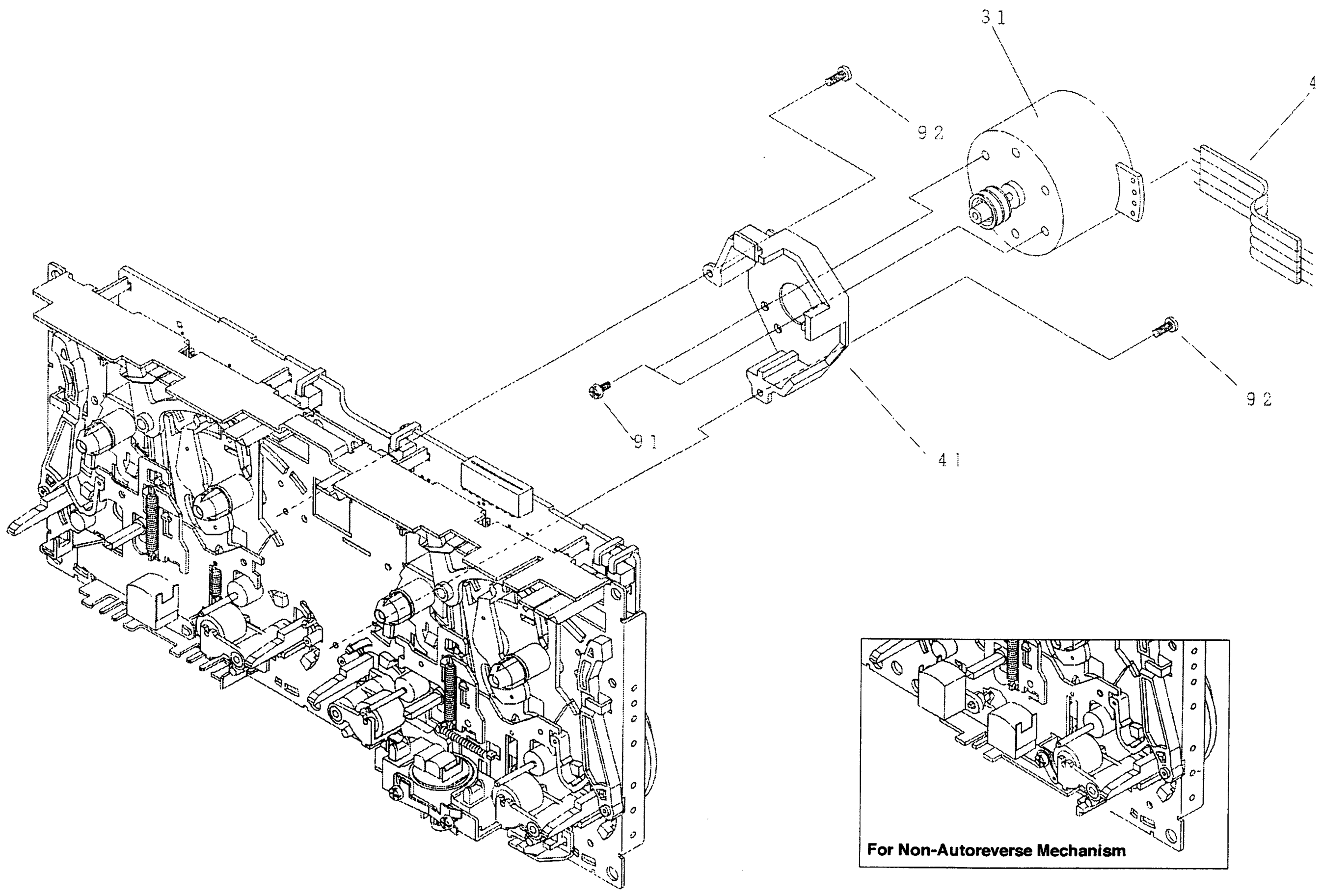

20
22
23
63
24
105
38
42
7
90
25
15
71
86
64
29
95
9
21
30
17
26
28
24
66
8
105
32
13
27
18
19
62
103
14
11
68
12
67
5
2
104
102
61
9
69
81
1
90
70



TAPE MODULE EXPLODED VIEW

1	313911877150	Autoreverse Mech. CWE44FR03
3	-	Screw D3 x 10
4	313911034080	Flex Cable 14 pin 7,5 cm
6	-	Screw M2 x 16

Note: Only the parts mentioned in this list are normal service spare parts.


31
40
92
92
91
41
For Non-Autoreverse Mechanism

TAPE MECHANISM - MOTOR EXPLODED VIEW

31	996500003006	Motor Assembly
91	-	Screw M2,6 x 5
92	-	Screw M2 x 5

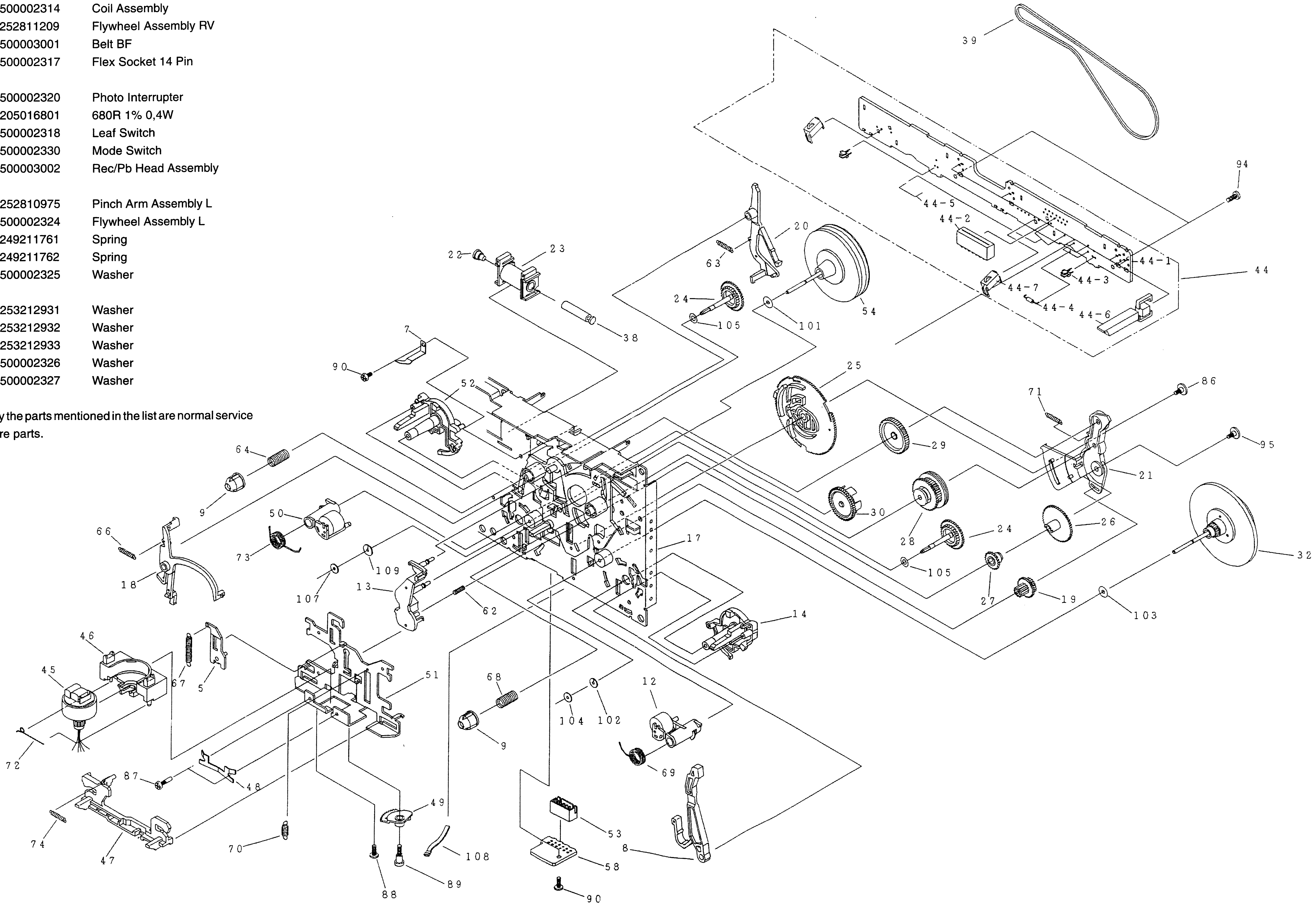
Note: Only the parts mentioned in this list are normal service spare parts.

TAPE MECHANISM B - RECORD/PLAYBACK *(Autoreverse version)*

MECHANICAL PARTS - REC/PB MECHANISM

12	482240210972	Pinch Arm Assembly R
23	996500002314	Coil Assembly
32	482252811209	Flywheel Assembly RV
39	996500003001	Belt BF
44-2	996500002317	Flex Socket 14 Pin
44-3	996500002320	Photo Interrupter
44-4	482205016801	680R 1% 0,4W
44-6	996500002318	Leaf Switch
44-7	996500002330	Mode Switch
45	996500003002	Rec/Pb Head Assembly
50	482252810975	Pinch Arm Assembly L
54	996500002324	Flywheel Assembly L
69	482249211761	Spring
73	482249211762	Spring
101	996500002325	Washer
102	482253212931	Washer
103	482253212932	Washer
104	482253212933	Washer
107	996500002326	Washer
109	996500002327	Washer

Note: Only the parts mentioned in the list are normal service spare parts.


39
94
44-5
44-2
44-1
44
44-3
44-7
44-4
44-6
20
63
54
24
105
101
22
23
38
7
90
52
25
71
86
95
29
21
64
9
30
28
24
26
32
66
50
73
109
107
13
62
105
17
27
19
103
18
14
46
45
67
5
51
68
104
102
12
9
69
72
87
48
49
53
8
74
47
70
108
58
88
89
90

ELECTRICAL PARTS LIST - ETF7 DOLBY BOARD

MISCELLANEOUS

1701	482226710953	Flex Connector 7P
1706	482226710953	Flex Connector 7P
1740	482226751255	Flex Connector 14P

CAPACITORS

2621	532212231647	1nF 10% 63V
2622	532212234099	470pF 10% 63V
2623	482212233575	220pF 5% 63V
2624	482212614585	100nF 10% 50V
2625	482212614585	100nF 10% 50V
2631	482212613751	47nF 10% 63V
2632	482212613751	47nF 10% 63V
2633	482212613473	220nF +80/-20% 50V
2634	482212613473	220nF +80/-20% 50V
2635	482212233891	3,3nF 10% 63V
2636	482212233891	3,3nF 10% 63V
2637	532212142386	100nF 5% 63V
2638	532212142386	100nF 5% 63V
2639	532212232531	100pF 5% 50V
2640	532212232531	100pF 5% 50V
2641	482212440769	4,7µF 20% 100V
2642	482212440769	4,7µF 20% 100V
2643	482212612105	33nF 5% 50V
2644	482212612105	33nF 5% 50V
2645	532212232658	22pF 5% 50V
2646	532212232658	22pF 5% 50V
2647	482212440769	4,7µF 20% 100V
2648	482212440769	4,7µF 20% 100V
2649	532212233861	120pF 10% 50V
2650	532212233861	120pF 10% 50V
2651	482212610326	180pF 5% 63V
2652	482212610326	180pF 5% 63V
2653	532212234099	470pF 10% 63V
2654	532212234099	470pF 10% 63V
2692	482212441584	100µF 20% 10V
2693	482212440207	100µF 20% 25V
2694	482212440207	100µF 20% 25V
2695	482212422652	2,2µF 20% 50V
2696	482212422652	2,2µF 20% 50V
2701	532212233538	150pF 2% 63V
2702	532212233538	150pF 2% 63V
2703	532212232531	100pF 5% 50V
2704	532212232531	100pF 5% 50V
2705	532212231863	330pF 5% 63V
2706	532212231863	330pF 5% 63V
2707	532212234099	470pF 10% 63V
2708	532212234099	470pF 10% 63V
2709	532212231863	330pF 5% 63V
2710	532212231863	330pF 5% 63V
2711	532212232531	100pF 5% 50V
2712	532212232531	100pF 5% 50V
2713	482212440248	10µF 20% 63V
2714	482212440248	10µF 20% 63V
2715	482212480195	470µF 20% 10V
2716	482212480195	470µF 20% 10V
2717	482212233127	2,2nF 10% 63V
2718	482212233127	2,2nF 10% 63V
2719	482212613188	15nF 5% 63V
2720	482212613188	15nF 5% 63V
2727	482212232535	680pF 10% 63V
2728	482212232535	680pF 10% 63V
2729	532212232654	22nF 10% 63V
2730	532212232654	22nF 10% 63V
2733	532212234099	470pF 10% 63V
2734	532212234099	470pF 10% 63V
2735	482212614585	100nF 10% 50V
2737	482212614585	100nF 10% 50V
2738	482212614585	100nF 10% 50V
2741	482212611585	22nF +80/-20% 25V
2742	532212232654	22nF 10% 63V
2743	482212614585	100nF 10% 50V
2744	482212614585	100nF 10% 50V
2760	482212614585	100nF 10% 50V
2761	482212480144	220µF 20% 25V
2762	482212440769	4,7µF 20% 100V
2763	482212440433	47µF 20% 25V
2765	482212440433	47µF 20% 25V
2769	532212234099	470pF 10% 63V
2770	532212234099	470pF 10% 63V
2780	482212481151	22µF 50V
2781	482212233177	10nF 20% 50V
2782	532212610223	4,7nF 10% 63V
2784	482212151305	15nF 10% 50V
2785	482212421913	1µF 20% 63V
2786	532212232531	100pF 5% 50V
2787	482212612105	33nF 5% 50V
2788	532212231647	1nF 10% 63V

RESISTORS

3601	482211711449	2k2 1% 0,1W
3602	482205120273	27k 5% 0,1W
3603	482211711449	2k2 1% 0,1W
3604	482211711148	56k 1% 0,1W
3605	482211711449	2k2 1% 0,1W
3606	482205120124	120k 5% 0,1W
3607	482211652256	2k2 5% 0,5W
3608	482205120273	27k 5% 0,1W
3609	482211652256	2k2 5% 0,5W
3610	482205120124	120k 5% 0,1W
3611	482211652256	2k2 5% 0,5W
3612	482211711148	56k 1% 0,1W
3613	482205120273	27k 5% 0,1W
3614	482205120273	27k 5% 0,1W
3616	482205120822	8k2 5% 0,1W
3618	482205120822	8k2 5% 0,1W
3620	482210012227	4k7 30% 0,1W
3622	482210012227	4k7 30% 0,1W
3623	482211710837	100k 1% 0,1W
3624	482211710837	100k 1% 0,1W
3625	482205110102	1k 2% 0,25W
3626	482205110102	1k 2% 0,25W
3628	482211710837	100k 1% 0,1W
3630	482205120471	470R 5% 0,1W
3631	482211710834	47k 1% 0,1W
3632	482211710834	47k 1% 0,1W
3633	482205120332	3k3 5% 0,1W
3634	482205120332	3k3 5% 0,1W
3635	482210011771	20k 30% 0,1W
3636	482210011771	20k 30% 0,1W
3637	482211710837	100k 1% 0,1W
3638	482211710837	100k 1% 0,1W
3639	482205120332	3k3 5% 0,1W
3640	482205120332	3k3 5% 0,1W
3641	482210011771	20k 30% 0,1W
3642	482210011771	20k 30% 0,1W
3643	482211710837	100k 1% 0,1W
3644	482211710837	100k 1% 0,1W
3645	482205120683	68k 5% 0,1W
3646	482205120683	68k 5% 0,1W
3647	482205120332	3k3 5% 0,1W
3648	482205120332	3k3 5% 0,1W
3649	482205120562	5k6 5% 0,1W
3650	482205120562	5k6 5% 0,1W
3651	482205110102	1k 2% 0,25W
3652	482205011002	1k 1% 0,4W
3655	482210012227	4k7 30% 0,1W
3656	482210012227	4k7 30% 0,1W
3657	482205110102	1k 2% 0,25W
3658	482205110102	1k 2% 0,25W
3659	482205120223	22k 5% 0,1W
3660	482205120223	22k 5% 0,1W
3661	482205120474	470k 5% 0,1W
3662	482205120474	470k 5% 0,1W
3663	482205120154	150k 5% 0,1W
3664	482205120154	150k 5% 0,1W
3665	482205120683	68k 5% 0,1W
3666	482205120683	68k 5% 0,1W
3667	482205120109	10R 5% 0,1W
3668	482205120109	10R 5% 0,1W
3669	482205120472	4k7 5% 0,1W
3670	482205120472	4k7 5% 0,1W
3672	482205120472	4k7 5% 0,1W
3674	482211652283	4k7 5% 0,5W
3676	482211710834	47k 1% 0,1W
3678	482211710834	47k 1% 0,1W
3679	482211710834	47k 1% 0,1W
3680	482211710834	47k 1% 0,1W
3683	482211710834	47k 1% 0,1W
3684	482211710834	47k 1% 0,1W
3685	482211652234	100k 5% 0,5W
3686	482211710837	100k 1% 0,1W
3691	482211710833	10k 1% 0,1W
3692	482211710965	18k 1% 0,1W
3693	482211652199	68R 5% 0,5W
3694	482205210109 ⚠	10R 5% 0,33W
3695	482211712521	68R 1% 0,1W
3701	482211711503	220R 1% 0,1W
3702	482211711503	220R 1% 0,1W
3703	482211711503	220R 1% 0,1W
3704	482211711503	220R 1% 0,1W
3705	482211711503	220R 1% 0,1W
3706	482211711503	220R 1% 0,1W
3707	482205120101	100R 5% 0,1W
3708	482205120101	100R 5% 0,1W
3709	482205120229	22R 5% 0,1W
3710	482205120229	22R 5% 0,1W
3711	482211710837	100k 1% 0,1W
3712	482211710837	100k 1% 0,1W
3713	482205120121	120R 5% 0,1W
3714	482205120121	120R 5% 0,1W
3715	482205110102	1k 2% 0,25W
3716	482205110102	1k 2% 0,25W
3717	482205120392	3k9 5% 0,1W
3718	482205120392	3k9 5% 0,1W
3719	482205120822	8k2 5% 0,1W
3720	482205120822	8k2 5% 0,1W
3721	482205120562	5k6 5% 0,1W
3722	482205120562	5k6 5% 0,1W
3723	482211711383	12k 1% 0,1W
3724	482211711383	12k 1% 0,1W
3727	482205120562	5k6 5% 0,1W
3728	482205120562	5k6 5% 0,1W
3729	482205120332	3k3 5% 0,1W
3730	482205120332	3k3 5% 0,1W
3731	482205120822	8k2 5% 0,1W
3732	482205120822	8k2 5% 0,1W
3733	482205120562	5k6 5% 0,1W
3734	482205120562	5k6 5% 0,1W
3735	482211683933	15k 1% 0,1W
3736	482211683933	15k 1% 0,1W
3737	482205120332	3k3 5% 0,1W
3738	482205120332	3k3 5% 0,1W
3739	482205120472	4k7 5% 0,1W
3740	482211710834	47k 1% 0,1W
3741	482211711454	820R 1% 0,1W
3742	482211711454	820R 1% 0,1W
3743	482205110102	1k 2% 0,25W
3744	482205110102	1k 2% 0,25W

ELECTRICAL PARTS LIST - ETF7 DOLBY BOARD

RESISTORS

3745	482205120392	3k9 5% 0,1W
3746	482205120392	3k9 5% 0,1W
3748	482211711449	2k2 1% 0,1W
3749	482211710834	47k 1% 0,1W
3751	482211710833	10k 1% 0,1W
3752	482211710837	100k 1% 0,1W
3753	482211710837	100k 1% 0,1W
3754	482205120333	33k 5% 0,1W
3756	482211713579	220k 1% 0,1W
3757	482211713579	220k 1% 0,1W
3758	482211710833	10k 1% 0,1W
3759	482211710833	10k 1% 0,1W
3760	482205120121	120R 5% 0,1W
3761	482205021003	10k 1% 0,6W
3762	482211711454	820R 1% 0,1W
3763	482205120154	150k 5% 0,1W
3764	482211683872	220R 5% 0,5W
3765	482205120393	39k 5% 0,1W
3766	482205120475	4M7 5% 0,1W
3767	482205120475	4M7 5% 0,1W
3768	482211710833	10k 1% 0,1W
3769	482211683933	15k 1% 0,1W
3770	482211711139	1k5 1% 0,1W
3771	482205120122	1k2 5% 0,1W
3772	482211711507	6k8 1% 0,1W
3773	482210012227	4k7 30% 0,1W
3774	482211711383	12k 1% 0,1W
3775	482205120478	4R7 5% 0,1W
3776	482211711507	6k8 1% 0,1W
3777	482211710353	150R 1% 0,1W
3778	482205210688	△ 6R8 5% 0,33W
3779	482205120334	330k 5% 0,1W
3780	482205120105	1M 5% 0,1W
3781	482205120475	4M7 5% 0,1W
3782	482211683933	15k 1% 0,1W
3783	482205120472	4k7 5% 0,1W
3784	482205120472	4k7 5% 0,1W
3785	532210011539	100k 30% 0,1W
3786	482205120223	22k 5% 0,1W
3787	482205120105	1M 5% 0,1W
3788	482205120105	1M 5% 0,1W
3789	482211710834	47k 1% 0,1W
4601	482205120008	0R Jumper 0805
4602	482205120008	0R Jumper 0805
4603	482205120008	0R Jumper 0805
4604	482205120008	0R Jumper 0805
4605	482205120008	0R Jumper 0805
4606	482205120008	0R Jumper 0805
4607	482205120008	0R Jumper 0805
4608	482205120008	0R Jumper 0805
4610	482205120008	0R Jumper 0805
4696	482205120008	0R Jumper 0805
4697	482205120008	0R Jumper 0805
4701	482205120008	0R Jumper 0805
4702	482205120008	0R Jumper 0805
4703	482205120008	0R Jumper 0805
4704	482205120008	0R Jumper 0805
4705	482205120008	0R Jumper 0805
4706	482205120008	0R Jumper 0805
4707	482205120008	0R Jumper 0805
4708	482205120008	0R Jumper 0805
4709	482205120008	0R Jumper 0805
4710	482205120008	0R Jumper 0805
4711	482205120008	0R Jumper 0805
4712	482205120008	0R Jumper 0805
4713	482205120008	0R Jumper 0805
4714	482205120008	0R Jumper 0805
4715	482205120008	0R Jumper 0805
4716	482205120008	0R Jumper 0805
4717	482205120008	0R Jumper 0805
4718	482205120008	0R Jumper 0805
4719	482205120008	0R Jumper 0805
4720	482205120008	0R Jumper 0805
4721	482205120008	0R Jumper 0805
4722	482205120008	0R Jumper 0805
4723	482205120008	0R Jumper 0805
4724	482205120008	0R Jumper 0805
4725	482205120008	0R Jumper 0805
4726	482205120008	0R Jumper 0805
4727	482205120008	0R Jumper 0805
4728	482205120008	0R Jumper 0805
4729	482205120008	0R Jumper 0805
4730	482205120008	0R Jumper 0805
4731	482205120008	0R Jumper 0805
4732	482205120008	0R Jumper 0805
4733	482205120008	0R Jumper 0805
4734	482205120008	0R Jumper 0805
4735	482205120008	0R Jumper 0805
4736	482205120008	0R Jumper 0805
4737	482205120008	0R Jumper 0805
4738	482205120008	0R Jumper 0805
4739	482205120008	0R Jumper 0805
4740	482205120008	0R Jumper 0805
4741	482205120008	0R Jumper 0805
4742	482205120008	0R Jumper 0805
4743	482205120008	0R Jumper 0805
4783	482205120008	0R Jumper 0805
4785	482205120008	0R Jumper 0805
4786	482205120008	0R Jumper 0805
4787	482205120008	0R Jumper 0805
4788	482205120008	0R Jumper 0805

COILS & FILTERS

5631	482215711865	Filter MPX 20kHz

ELECTRICAL PARTS LIST - ETF7 DOLBY BOARD

5632	482215711865	Filter MPX 20kHz
5701	482215711477	Coil 2,2µH 5%
5702	482215711477	Coil 2,2µH 5%
5703	482215620946	Osc. Coil 100kHz

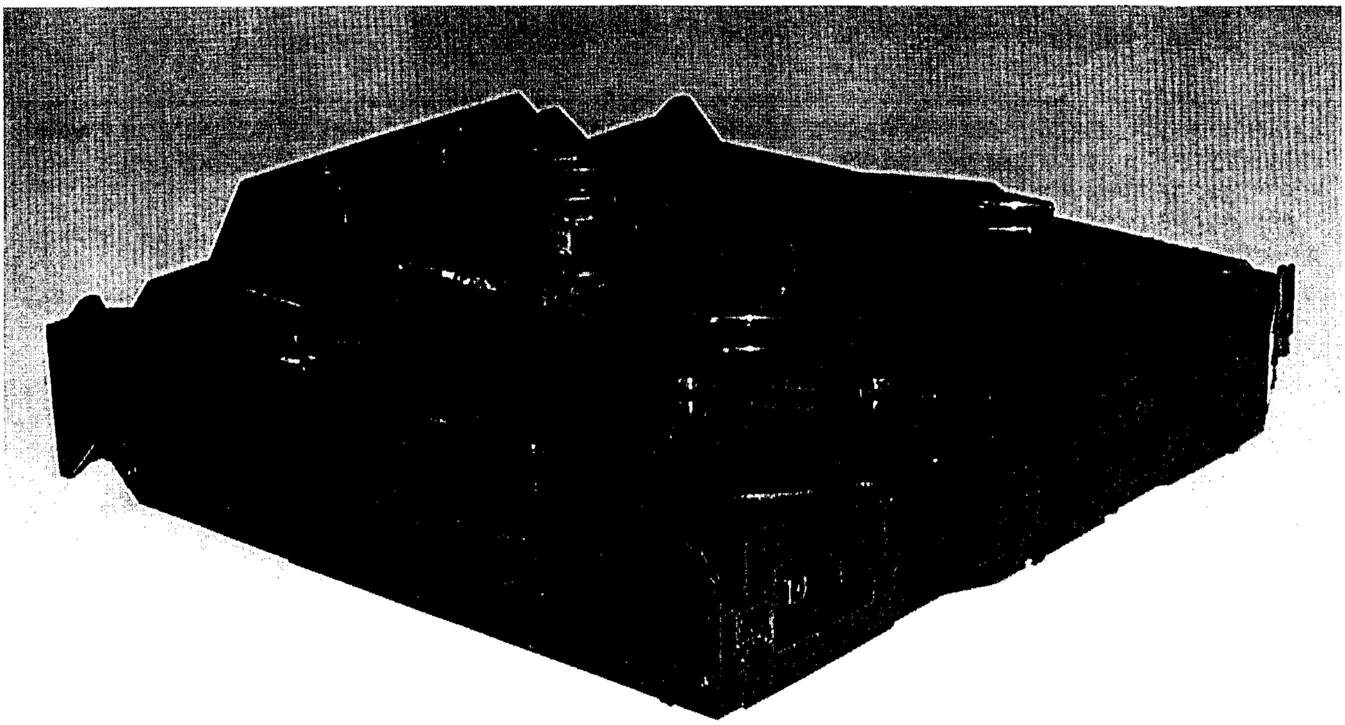
DIODES

6611	482213031878	1N4003G
6612	482213031878	1N4003G
6613	482213032245	BYV10-40
6614	482213030621	1N4148
6770	482213030621	1N4148
6771	482213030621	1N4148
6772	482213030621	1N4148
6773	482213030621	1N4148
6774	482213030621	1N4148
6775	482213030621	1N4148
6776	482213030621	1N4148
6777	482213034382	BZX79-C8V2
6778	482213030621	1N4148
6782	482213030621	1N4148
6785	482213030621	1N4148
6786	482213030621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7610	532220911306	HEF4094BT
7612	532213060845	BC807-25
7613	532213060845	BC807-25
7614	532213060845	BC807-25
7616	482213060373	BC857B
7618	482213060511	BC847B
7619	482213060511	BC847B
7620	482213060511	BC847B
7622	482213060511	BC847B
7623	482213060511	BC847B
7624	482213060511	BC847B
7630	482220917322	CXA1551M
7631	482213060511	BC847B
7632	482213060511	BC847B
7633	482213060511	BC847B
7634	482213060511	BC847B
7635	482213060511	BC847B
7636	482213060511	BC847B
7637	482213060511	BC847B
7638	482213060511	BC847B
7640	482220983357	NJM4560M
7710	482220932919	HEF4952BT
7720	932214000668	AN7323S
7730	482220932919	HEF4952BT
7740	482220932919	HEF4952BT
7780	482213060511	BC847B
7781	482213042804	BC817-25
7782	482213044568	BC557B
7783	482213060511	BC847B
7784	482213060373	BC857B
7785	482213063494	J111
7786	482213063494	J111
7787	482213060511	BC847B
7788	482213060511	BC847B
7789	482213060511	BC847B
7790	482213060511	BC847B
7791	482213060511	BC847B
7792	482213060511	BC847B

Note : Only the parts mentioned in this list are normal service spare parts.



3CDC-LC

(3 Disc Carrousel Changer)

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WARNING

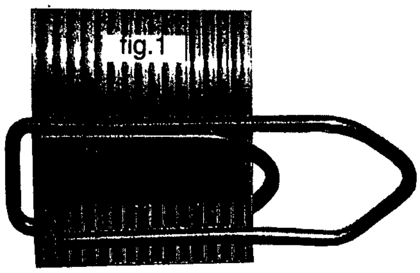
CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CDM MECHANISM. THAT'S WHY, BESIDES THE SAFETY MEASURES LIKE

- ***SWITCH OFF POWER SUPPLY***
- ***ESD PROTECTION***

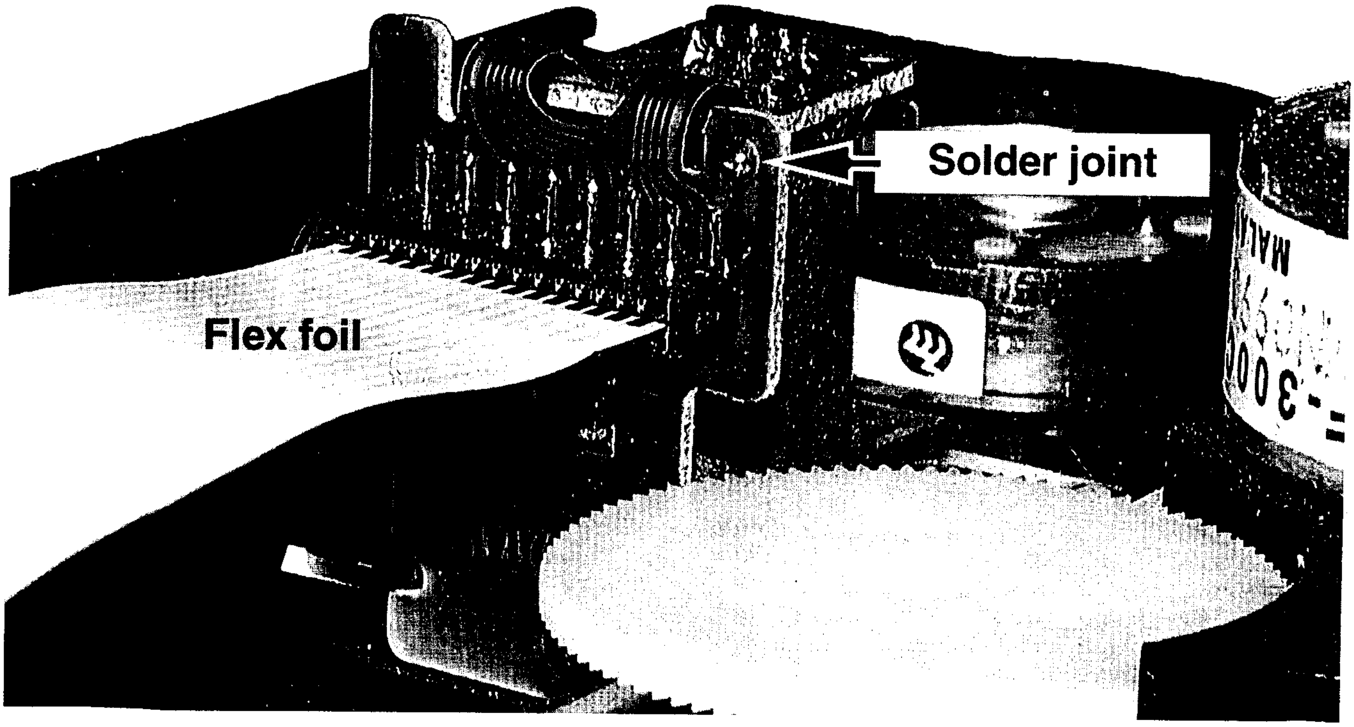
ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

The following steps have to be done when replacing the CD mechanism:

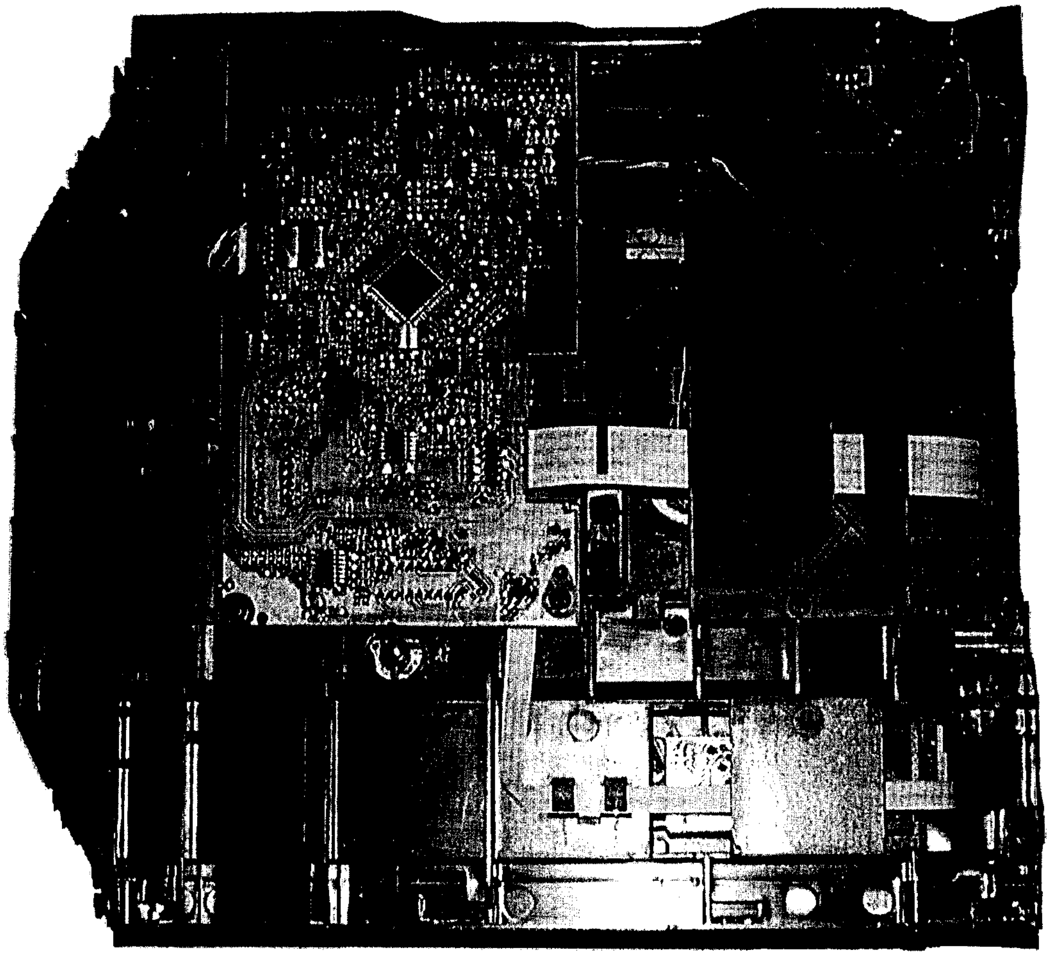
1. Disconnect CD drive flexfoil from old CD drive
2. Connect paperclip to CD drive flexfoil to short-circuit flexfoil (fig.1)
3. Remove old CD drive
4. Remove short-circuit from flexfoil
5. Connect flexfoil to new CD drive
6. Position new CD drive in its studs
7. Remove short-circuit from Laserunit



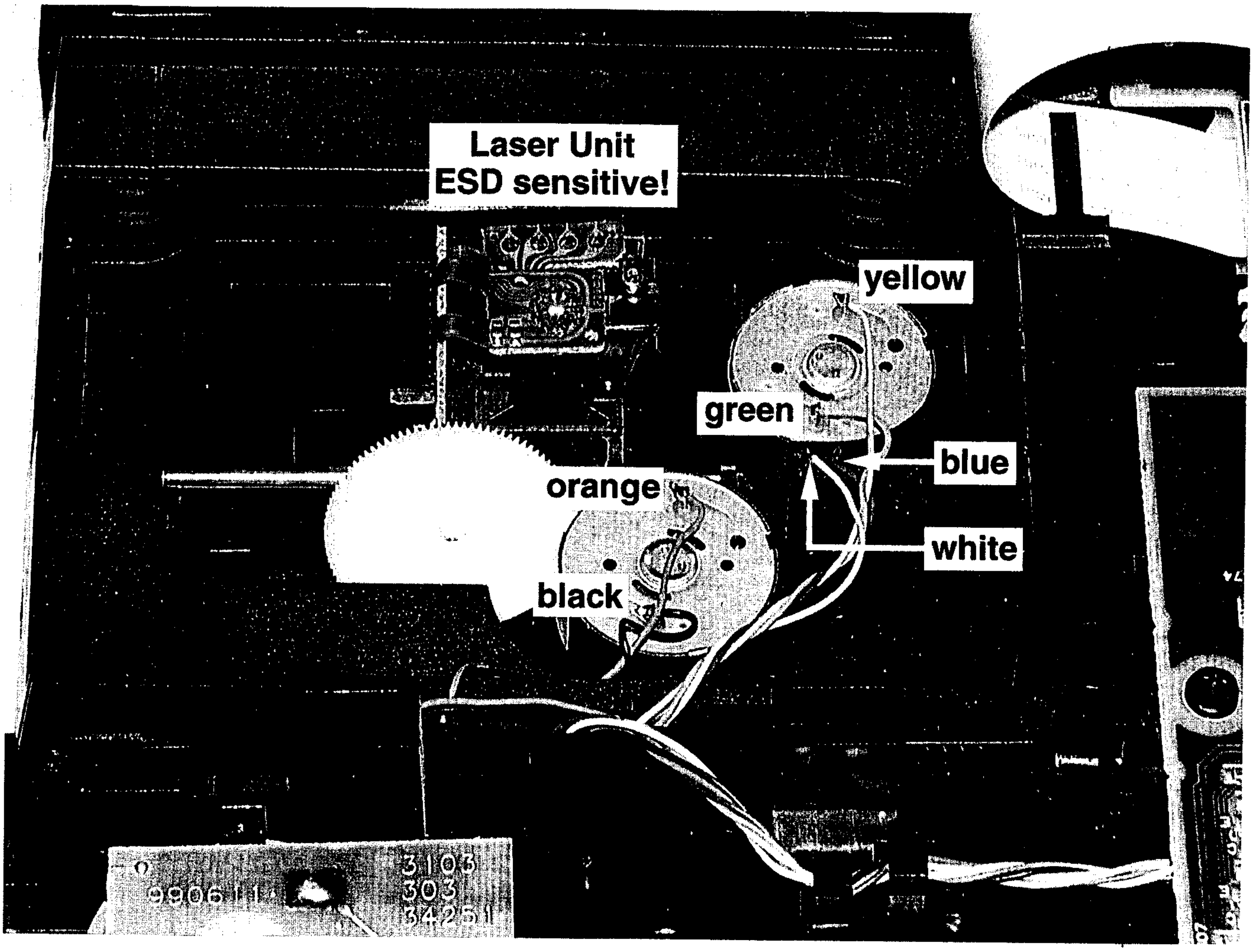
Attention: The laser diode of this CD drive is protected against ESD by a solder joint which shortcircuits the laserdiode to ground.
For proper functionality of the CD drive this solder joint must be removed **after** connection the drive to the set.



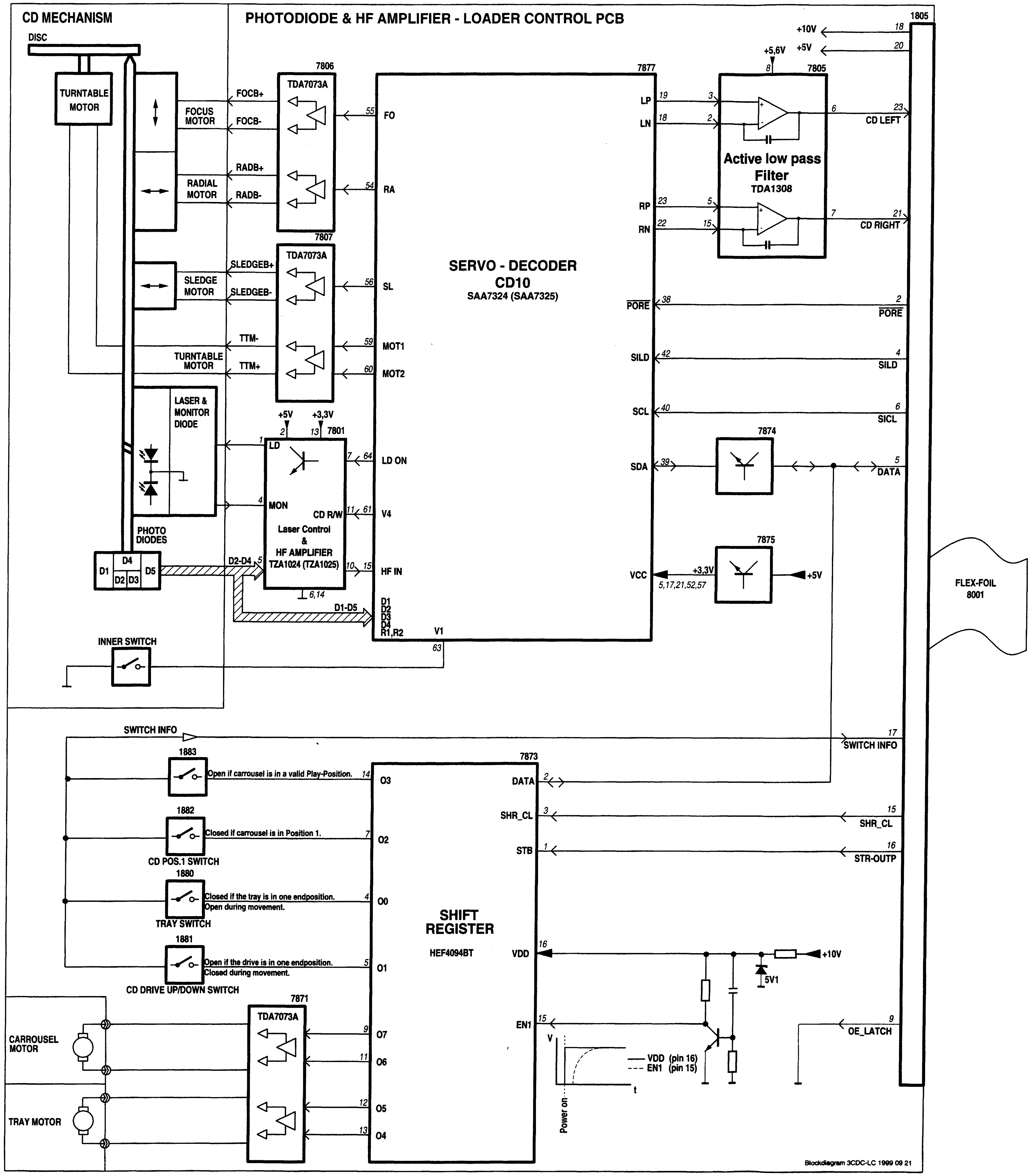
Service Position



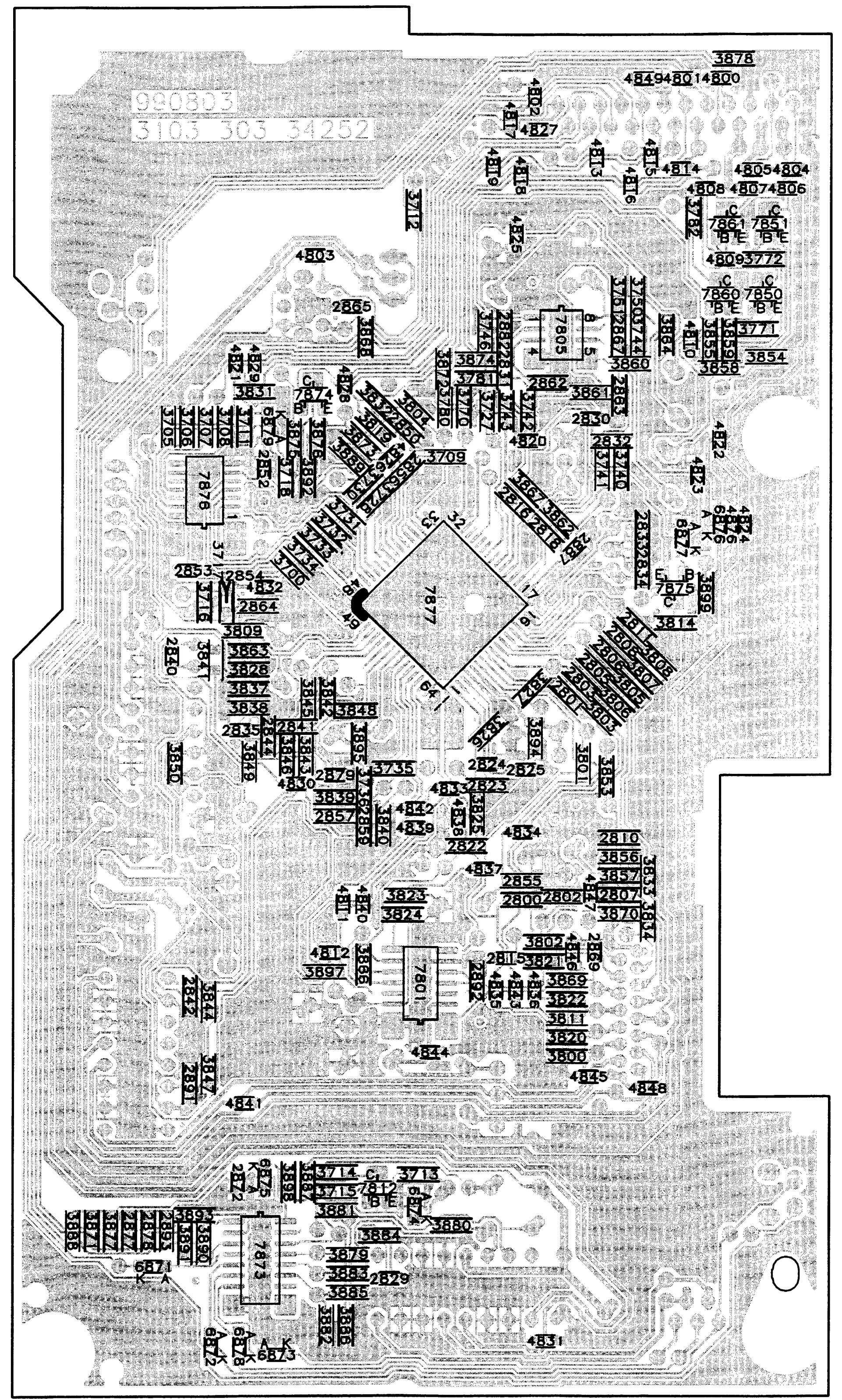
Wiring


Laser Unit
ESD sensitive!
yellow
green
blue
orange
white
black
9906
3103
303
34251

Blockdiagram


CD MECHANISM
DISC
TURNTABLE MOTOR
FOCUS MOTOR
RADIAL MOTOR
SLEDGE MOTOR
TURNTABLE MOTOR
LASER & MONITOR DIODE
PHOTO DIODES
D1
D4
D2
D3
D5
INNER SWITCH
PHOTODIODE & HF AMPLIFIER - LOADER CONTROL PCB
7806
TDA7073A
FOCB+
FOCB-
RADB+
RADB-
7807
TDA7073A
SLEDGEB+
SLEDGEB-
TTM-
TTM+
+5V
+3,3V
7801
LD
MON
CD R/W
Laser Control & HF AMPLIFIER TZA1024 (TZA1025)
D2-D4
D1-D5
6,14
7877
FO
RA
SL
MOT1
MOT2
LD ON
V4
HF IN
D1
D2
D3
D4
R1,R2
V1
63
SERVO - DECODER
CD10
SAA7324 (SAA7325)
LP
LN
RP
RN
PORE
SILD
SCL
SDA
VCC
5,17,21,52,57
+3,3V
+5,6V
7805
Active low pass Filter
TDA1308
CD LEFT
CD RIGHT
+10V
+5V
1805
PORE
SILD
SICL
7874
DATA
7875
+5V
FLEX-FOIL
8001
SWITCH INFO
SWITCH INFO
1883
Open if carrousel is in a valid Play-Position.
1882
Closed if carrousel is in Position 1.
CD POS.1 SWITCH
1880
Closed if the tray is in one endposition.
Open during movement.
TRAY SWITCH
1881
Open if the drive is in one endposition.
Closed during movement.
CD DRIVE UP/DOWN SWITCH
7873
O3
O2
O0
O1
O7
O6
O5
O4
DATA
SHR_CL
STB
SHIFT REGISTER
HEF4094BT
VDD
EN1
SHR_CL
STR-OUTP
+10V
5V1
OE_LATCH
V
t
Power on
VDD (pin 16)
EN1 (pin 15)
7871
TDA7073A
CARROUSEL MOTOR
TRAY MOTOR
Blockdiagram 3CDC-LC 1999 09 21

3CDC-LC Mainboard Copperside view



This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

3CDC-LC Mainboard Layout stage .2 990920

Mapping

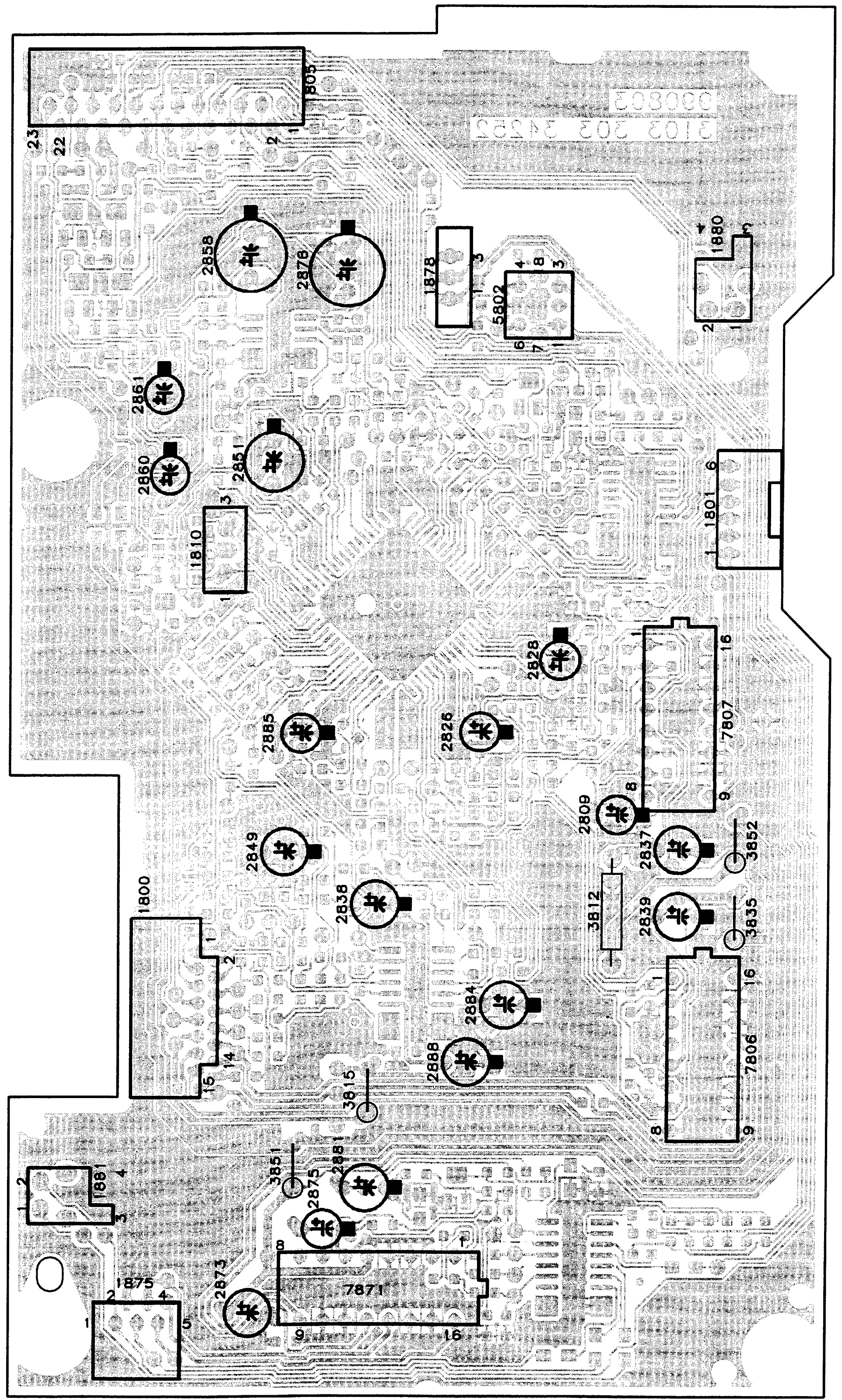
Copperside

2800	B6
2801	B4
2802	B6
2803	B4
2805	B4
2806	B4
2807	B6
2808	B4
2810	B5
2811	B4
2815	C6
2816	C3
2818	B3
2822	C5
2823	C5
2824	C5
2825	B5
2829	C8
2830	B3
2831	C2
2832	B3
2833	B3
2834	B4
2835	D5
2840	E4
2841	D5
2842	D6
2844	D5
2850	C3
2852	D3
2853	D4
2854	D4
2855	B5
2856	C3
2857	D5
2859	C5
2862	B3
2863	B3
2864	D4
2865	C2
2867	B2
2869	B6
2872	D7
2877	E8
2878	E8
2879	D5
2882	C2
2887	B3
2891	D7
2892	C6
2893	E8
3700	D4
3705	E3
3706	D3
3707	D3
3708	D3
3709	C3
3711	D3
3712	C1
3713	C7
3714	D7
3715	D7
3716	D4
3717	D4
3718	D3
3727	C3
3728	C3
3730	C3
3731	D3
3732	D3
3733	D3
3734	D4
3735	C5
3736	C5
3740	B3
3741	B3
3742	B3
3743	C3
3744	B2
3746	C2
3750	B2
3751	B2
3770	C3
3771	A2
3772	A2
3780	C3
3781	C2
3782	A2
3800	B6
3801	B5
3802	B6
3803	B4
3804	C3
3805	B4
3806	B4
3807	B4
3808	B4
3809	D4
3811	B6
3814	B4
3819	C3
3820	B6
3821	B6
3822	B6
3823	C6
3824	C6
3825	C5
3826	C5
3827	B4
3828	D4
3831	D3
3832	C3
3833	B5
3834	B6
3837	D4
3838	D4
3839	D5
3840	C5
3841	D4
3842	D4
3843	D5
3844	D6
3845	D4
3846	D5
3847	D7
3848	C4
3849	D5
3850	E5
3853	B5
3854	A2
3855	A2
3856	B5
3857	B5
3858	A2
3859	A2
3860	B2
3861	B3
3862	B3
3863	D4
3864	B2
3866	C6
3867	B3
3868	C2
3869	B6
3870	B6
3871	E8
3872	C2
3873	C3
3874	C2
3875	D3
3876	D3
3877	E8
3878	A1
3879	C8
3880	C7
3881	D7
3882	D8
3883	C8
3884	C8
3885	C8
3886	D8
3887	D7
3888	E8
3889	D3
3890	D8
3891	D8
3892	D3
3893	D7
3894	B5
3895	C5
3897	D6
3898	D7
3899	A4
4800	A1
4801	B1
4802	B1
4803	D2
4804	A1
4805	A1
4806	A1
4807	A1
4808	A1
4809	A2
4810	B2
4811	D6
4812	D6
4813	B1
4814	B1
4815	B1
4816	B1
4817	C1
4818	C1
4819	C1
4820	B3
4821	D2
4822	A3
4823	A3
4824	A3
4825	C2
4826	C3
4827	B1
4828	D3
4829	D2
4830	D5
4831	B8
4832	D4
4833	C5
4834	B5
4835	C6
4836	B6
4837	C5
4838	C5
4839	C5
4840	C6
4841	D7
4842	C5
4843	C6
4844	C6
4845	B7
4846	B6
4847	B6
4848	B7
4849	B1
4876	A3
6871	E8
6872	D8
6873	D8
6874	C7
6875	D7
6876	A3
6877	B3
6878	D8
6879	D3
7801	C6
7805	B2
7812	C7
7850	A2
7851	A2
7860	A2
7861	A2
7873	D8
7874	D3
7875	B4
7876	D3
7877	C4

Componentside

1800	A6
1801	E3
1805	B1
1810	B3
1875	A8
1878	C2
1880	E2
1881	A7
2809	D5
2826	C5
2828	D4
2837	D5
2838	C6
2839	D6
2849	B5
2851	B3
2858	B2
2860	A3
2861	A3
2873	B8
2875	B7
2876	B2
2881	C7
2884	C6
2885	B5
2888	C7
3812	D6
3815	C7
3835	E6
3851	B7
3852	E5
5802	D2
7806	E6
7807	E5
7871	C8

3CDC-LC Mainboard Componentside view

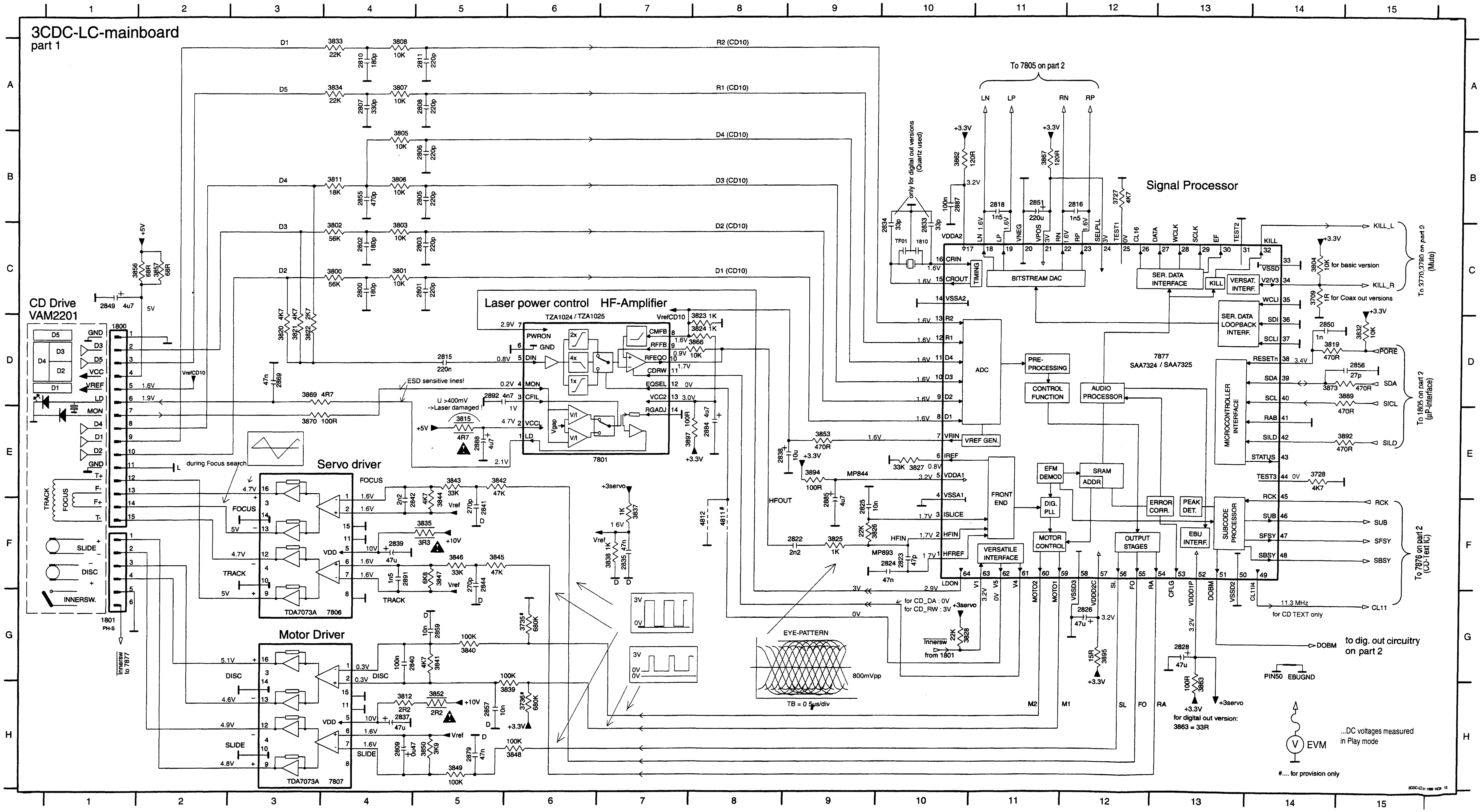


This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

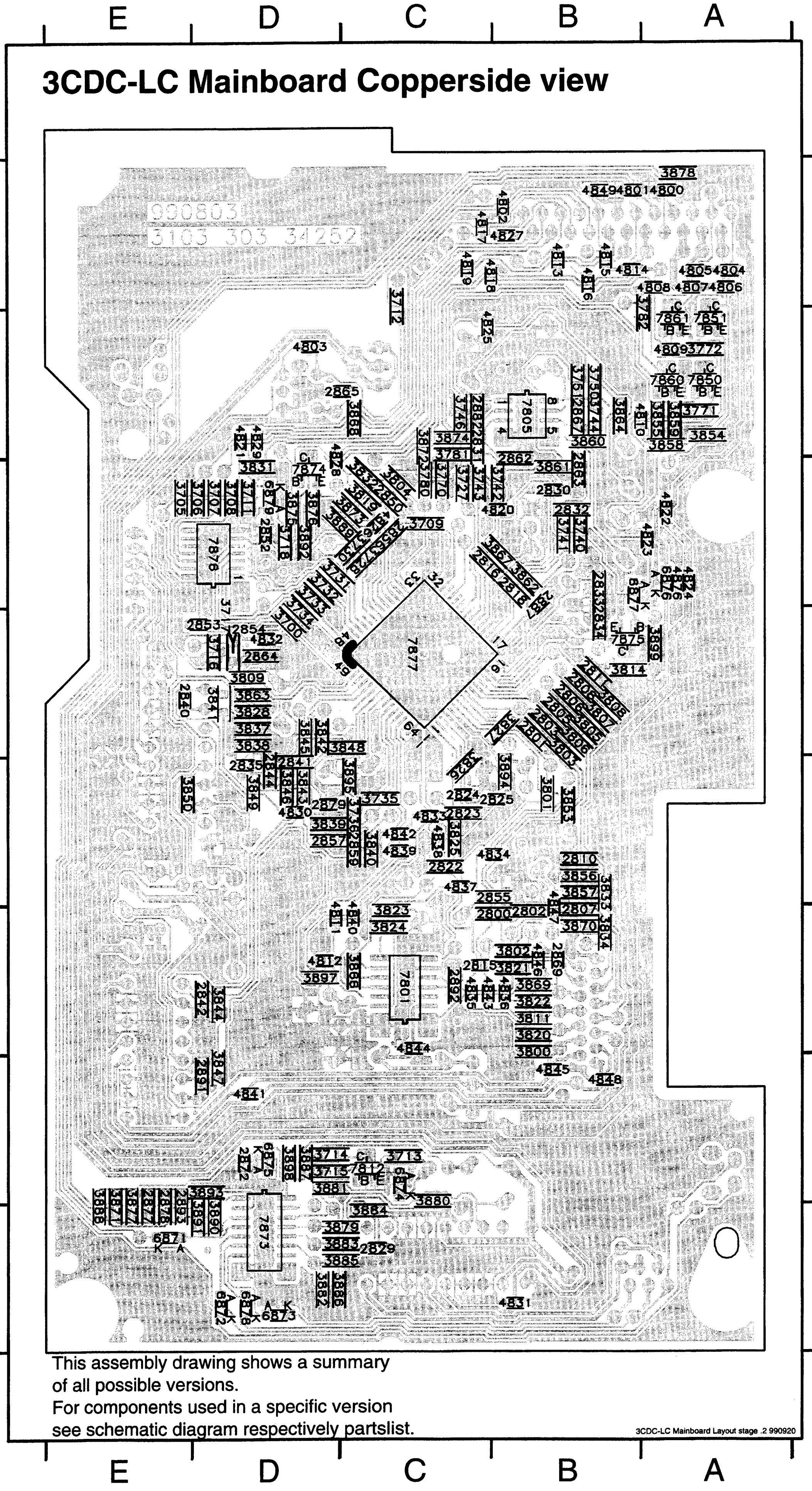
3CDC-LC Mainboard Layout stage .2 990920

1800 D1	2802 C4	2808 A5	2816 B12	2825 F9	2835 F7	2841 F5	2851 B11	2869 D3	2888 E5	3728 E14	3802 C4	3807 A4	3819 D14	3824 D8	3832 D15	3838 F7
1801 G1	2803 C5	2809 H4	2818 B11	2826 G12	2837 H4	2842 F5	2855 B4	2879 H5	2891 F4	3735 G6	3803 C4	3808 A4	3820 D3	3825 F9	3833 A4	3839 H6
1810 C10	2805 B5	2810 A4	2822 F9	2828 G13	2838 E8	2844 F5	2856 D15	2884 E8	2892 D5	3736 H6	3804 C14	3811 B4	3821 D3	3826 F9	3834 A4	3840 G5
2800 C4	2806 B5	2811 A5	2823 F10	2833 C10	2839 F4	2849 C1	2857 H5	2885 F9	3709 C14	3800 C4	3805 B4	3812 H4	3822 D3	3827 E10	3835 F5	3841 G5
2801 C5	2807 A4	2815 D5	2824 F10	2834 C10	2840 G4	2850 D14	2859 G5	2887 B10	3727 B12	3801 C4	3806 B4	3815 E5	3823 D8	3828 G10	3837 F7	3842 E5

3843 E5	3848 H6	3856 C1	3867 B11	3892 E15	4812 F8	MP713 C5	MP730 B5	MP800 E3	MP814 F2	MP819 G9	MP829 B3	MP841 F6	MP846 G1	MP851 E2	MP859 F10	MP873 H4	MP883 E5
3844 F5	3849 H5	3857 C2	3869 D3	3894 E9	7801 E7	MP715 C5	MP731 B13	MP802 B15	MP815 C3	MP820 F8	MP837 E3	MP842 H6	MP847 G2	MP852 F2	MP860 C2	MP875 G13	MP884 E5
3845 F5	3850 H5	3862 B10	3870 E3	3895 G12	7806 G4	MP716 A5	MP743 D2	MP809 E10	MP816 A3	MP821 D15	MP838 G6	MP843 F6	MP848 E2	MP853 F2	MP861 E8	MP877 E4	MP893 F10
3846 F5	3852 H5	3863 H13	3873 D14	3897 E7	7807 H4	MP717 A5	MP744 D2	MP812 F2	MP817 A3	MP827 B10	MP839 G6	MP844 E9	MP849 F2	MP855 E10	MP870 D8	MP878 B13	MP895 E14
3847 F5	3853 E9	3866 D8	3889 D15	4811 F8	7877 D12	MP729 B5	MP745 E2	MP813 C3	MP818 D3	MP828 G9	MP840 E6	MP845 F4	MP850 F2	MP858 F9	MP872 C15	MP879 B11	MP896 B12


3CDC-LC-mainboard
part 1
CD Drive
VAM2201
1800
1801
Laser power control HF-Amplifier
TZA1024 / TZA1025
7801
Servo driver
TDA7073A 7806
Motor Driver
TDA7073A 7807
Signal Processor
7877
SAA7324 / SAA7325
To 7805 on part 2
LN LP RN RP
BITSTREAM DAC
ADC
PRE-PROCESSING
CONTROL FUNCTION
AUDIO PROCESSOR
VREF GEN.
FRONT END
EFM DEMOD
SRAM
ADDR
DIG. PLL
ERROR CORR.
PEAK DET.
EBU INTERF.
MOTOR CONTROL
VERSATILE INTERFACE
OUTPUT STAGES
SUBCODE PROCESSOR
MICROCONTROLLER INTERFACE
SER. DATA INTERFACE
SER. DATA LOOPBACK INTERF.
KILL
VERSAT. INTERF.
TIMING
R2 (CD10)
R1 (CD10)
D4 (CD10)
D3 (CD10)
D2 (CD10)
D1 (CD10)
KILL_L
KILL_R
for basic version
for Coax out versions
To 3770,3780 on part 2 (Mute)
PORE
SDA
SICL
SILD
To 1805 on part 2 (µP-Interface)
RCK
SUB
SFSY
SBSY
To 7876 on part 2 (CD-Text IC)
CL11
11.3 MHz
for CD TEXT only
DOBM
to dig. out circuitry on part 2
PIN50 EBUGND
only for digital out versions (Quartz used)
ESD sensitive lines!
U >400mV ->Laser damaged !
during Focus search
FOCUS
TRACK
DISC
SLIDE
INNERSW.
TRACK FOCUS
Innersw to 7877
Innersw from 1801
for CD_DA : 0V
for CD_RW : 3V
EYE-PATTERN
800mVpp
TB = 0.5µs/div
for digital out version: 3863 = 33R
...DC voltages measured in Play mode
EVM
#.... for provision only
+3servo
+3.3V
+10V
Vref
HFOUT
HFIN
MP844
MP893
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H

3CDC-LC Mainboard Copperside view


E
D
C
B
A
1
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7
8
7877
7876
7805
7801
7873
3CDC-LC Mainboard Layout stage .2 990920

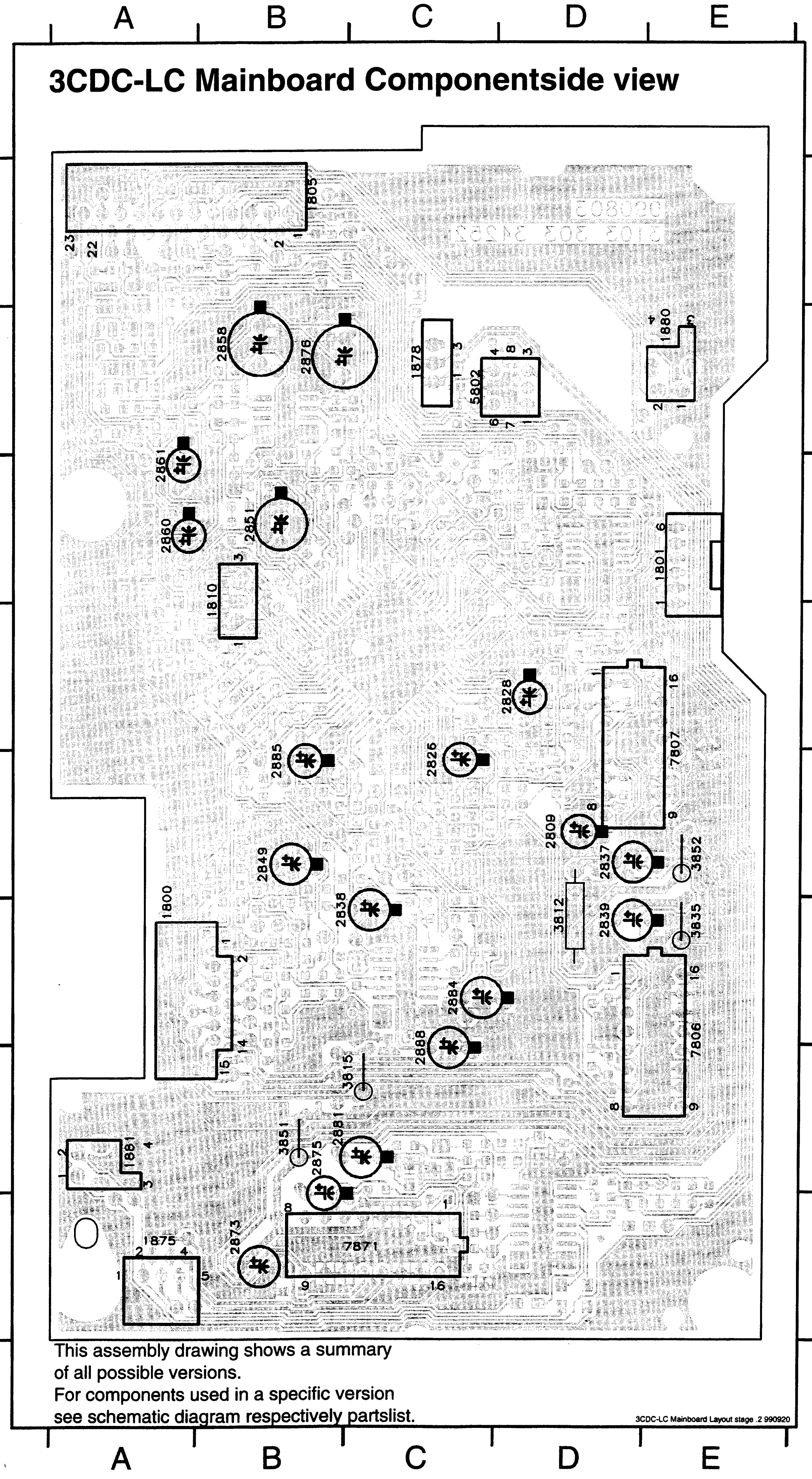
This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

Mapping

Copperside	
2800	B6
2801	B4
2802	B6
2803	B4
2805	B4
2806	B4
2807	B6
2808	B4
2810	B5
2811	B4
2815	C6
2816	C3
2818	B3
2822	C5
2823	C5
2824	C5
2825	B5
2829	C8
2830	B3
2831	C2
2832	B3
2833	B3
2834	B4
2835	D5
2840	E4
2841	D5
2842	D6
2844	D5
2850	C3
2852	D3
2853	D4
2854	D4
2855	B5
2856	C3
2857	D5
2859	C5
2862	B3
2863	B3
2864	D4
2865	C2
2867	B2
2869	B6
2872	D7
2877	E8
2878	E8
2879	D5
2882	C2
2887	B3
2891	D7
2892	C6
2893	E8
3700	D4
3705	E3
3706	D3
3707	D3
3708	D3
3709	C3
3711	D3
3712	C1
3713	C7
3714	D7
3715	D7
3716	D4
3717	D4
3718	D3
3727	C3
3728	C3
3730	C3
3731	D3
3732	D3
3733	D3
3734	D4
3735	C5
3736	C5
3740	B3
3741	B3
3742	B3
3743	C3
3744	B2
3746	C2
3750	B2
3751	B2
3770	C3
3771	A2
3772	A2
3780	C3
3781	C2
3782	A2
3800	B6
3801	B5
3802	B6
3803	B4
3804	C3
3805	B4
3806	B4
3807	B4
3808	B4
3809	D4
3811	B6
3814	B4
3819	C3
3820	B6
3821	B6
3822	B6
3823	C6
3824	C6
3825	C5
3826	C5
3827	B4
3828	D4
3831	D3
3832	C3
3833	B5
3834	B6
3837	D4
3838	D4
3839	D5
3840	C5
3841	D4
3842	D4
3843	D5
3844	D6
3845	D4
3846	D5
3847	D7
3848	C4
3849	D5
3850	E5
3853	B5
3854	A2
3855	A2
3856	B5
3857	B5
3858	A2
3859	A2
3860	B2
3861	B3
3862	B3
3863	D4
3864	B2
3866	C6
3867	B3
3868	C2
3869	B6
3870	B6
3871	E8
3872	C2
3873	C3
3874	C2
3875	D3
3876	D3
3877	E8
3878	A1
3879	C8
3880	C7
3881	D7
3882	D8
3883	C8
3884	C8
3885	C8
3886	D8
3887	D7
3888	E8
3889	D3
3890	D8
3891	D8
3892	D3
3893	D7
3894	B5
3895	C5
3897	D6
3898	D7
3899	A4
4800	A1
4801	B1
4802	B1
4803	D2
4804	A1
4805	A1
4806	A1
4807	A1
4808	A1
4809	A2
4810	B2
4811	D6
4812	D6
4813	B1
4814	B1
4815	B1
4816	B1
4817	C1
4818	C1
4819	C1
4820	B3
4821	D2
4822	A3
4823	A3
4824	A3
4825	C2
4826	C3
4827	B1
4828	D3
4829	D2
4830	D5
4831	B8
4832	D4
4833	C5
4834	B5
4835	C6
4836	B6
4837	C5
4838	C5
4839	C5
4840	C6
4841	D7
4842	C5
4843	C6
4844	C6
4845	B7
4846	B6
4847	B6
4848	B7
4849	B1
4876	A3
6871	E8
6872	D8
6873	D8
6874	C7
6875	D7
6876	A3
6877	B3
6878	D8
6879	D3
7801	C6
7805	B2
7812	C7
7850	A2
7851	A2
7860	A2
7861	A2
7873	D8
7874	D3
7875	B4
7876	D3
7877	C4

Componentside	
1800	A6
1801	E3
1805	B1
1810	B3
1875	A8
1878	C2
1880	E2
1881	A7
2809	D5
2826	C5
2828	D4
2837	D5
2838	C6
2839	D6
2849	B5
2851	B3
2858	B2
2860	A3
2861	A3
2873	B8
2875	B7
2876	B2
2881	C7
2884	C6
2885	B5
2888	C7
3812	D6
3815	C7
3835	E6
3851	B7
3852	E5
5802	D2
7806	E6
7807	E5
7871	C8

3CDC-LC Mainboard Componentside view


A
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1805
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2851
1810
1801
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2885
2826
7807
2809
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2837
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3812
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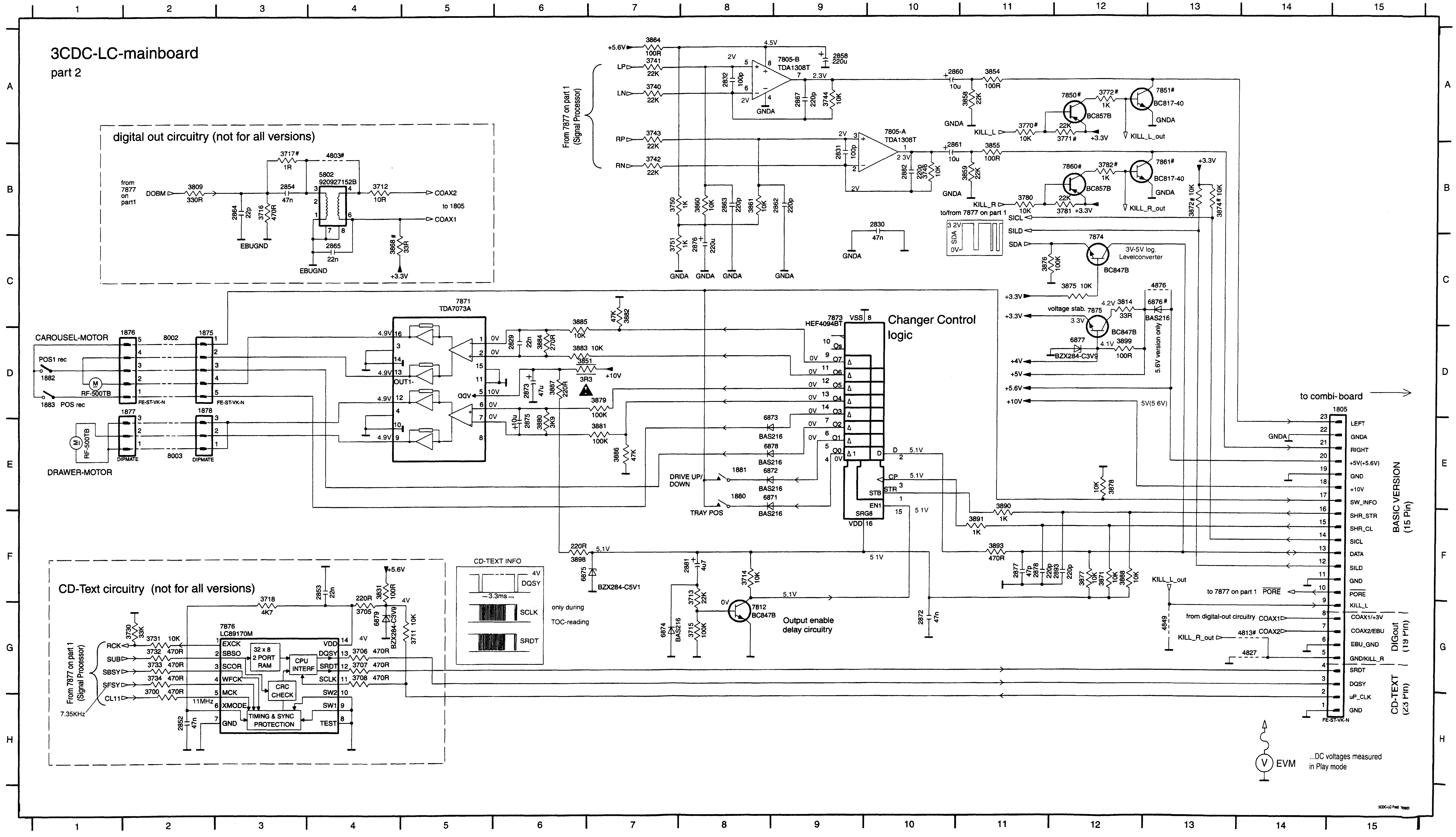
3835
1800
7806
2884
2888
3815
3851
2881
2875
1881
1875
2873
7871
3CDC-LC Mainboard Layout stage .2 990920

This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

1805	D15
1875	D2
1878	D2
1880	E8
1881	E8
2829	D6
2830	B10
2831	B9
2832	A8
2852	H2
2853	F4
2854	B3
2858	A10
2860	A10
2861	B10
2862	B9
2863	B8
2864	B3
2865	C4
2867	A9
2872	G10
2873	D6
2875	E6
2876	C8
2877	F11
2878	F11
2881	F8
2882	B10
2893	F12
3700	H2
3705	G4
3706	G4
3707	G4
3708	G4
3711	G5
3712	B4
3713	F8
3714	F8
3715	G8
3716	B3
3717	B3
3718	G3
3730	G2
3731	G2
3732	G2
3733	G2
3734	G2
3740	A7
3741	A7
3742	B7
3743	A7
3744	A9
3746	B10
3750	B7
3751	C7
3770	A11
3771	A12
3772	A12
3780	B11
3781	B12
3782	B12
3809	B2
3814	C12
3831	F4
3851	D6
3854	A11
3855	B11
3858	A11
3859	B11
3860	B8
3861	B8
3864	A7
3868	C4
3871	F12
3872	B13
3874	B13
3875	C12
3876	C11
3877	F12
3878	E12
3879	D7
3880	E6
3881	E7
3882	C7
3883	D6
3884	D6
3885	C6
3886	E7
3887	D6
3888	F12
3890	F11
3891	F11
3893	F11
3898	F6
3899	D12
4803	B4
4813	G14
4827	G14
4849	G13
4876	C13
5802	B4
6871	E8
6872	E8
6873	E8
6874	G7
6875	F6
6876	C13
6877	D12
6878	E8
6879	G4
7805-A	A10
7805-B	A9
7812	G8
7850	A12
7851	A13
7860	B12
7861	B13
7871	C5
7873	C9
7874	C12
7875	C12
7876	G3
MP721	C8
MP722	E8
MP723	C8
MP724	D8
MP725	D8
MP726	D8
MP740	H14
MP741	G14
MP742	G14
MP801	D12
MP803	F10
MP804	G14
MP805	E13
MP806	F13
MP807	F14
MP808	E13
MP810	F13
MP811	F13
MP822	E3
MP823	D3
MP824	D4
MP825	D4
MP830	A9
MP832	G9
MP833	F13
MP834	G14
MP835	F14
MP854	A13
MP856	E14
MP857	B13
MP862	G13
MP863	C11
MP865	D11
MP866	E8
MP867	E8
MP868	F8
MP869	C12
MP871	D6
MP874	D12
MP881	G2
MP882	G2
MP886	G3
MP887	H5
MP888	G5
MP889	G5
MP890	B3
MP891	B5
MP892	B5
MP897	D12
MP898	D13
MP899	E14



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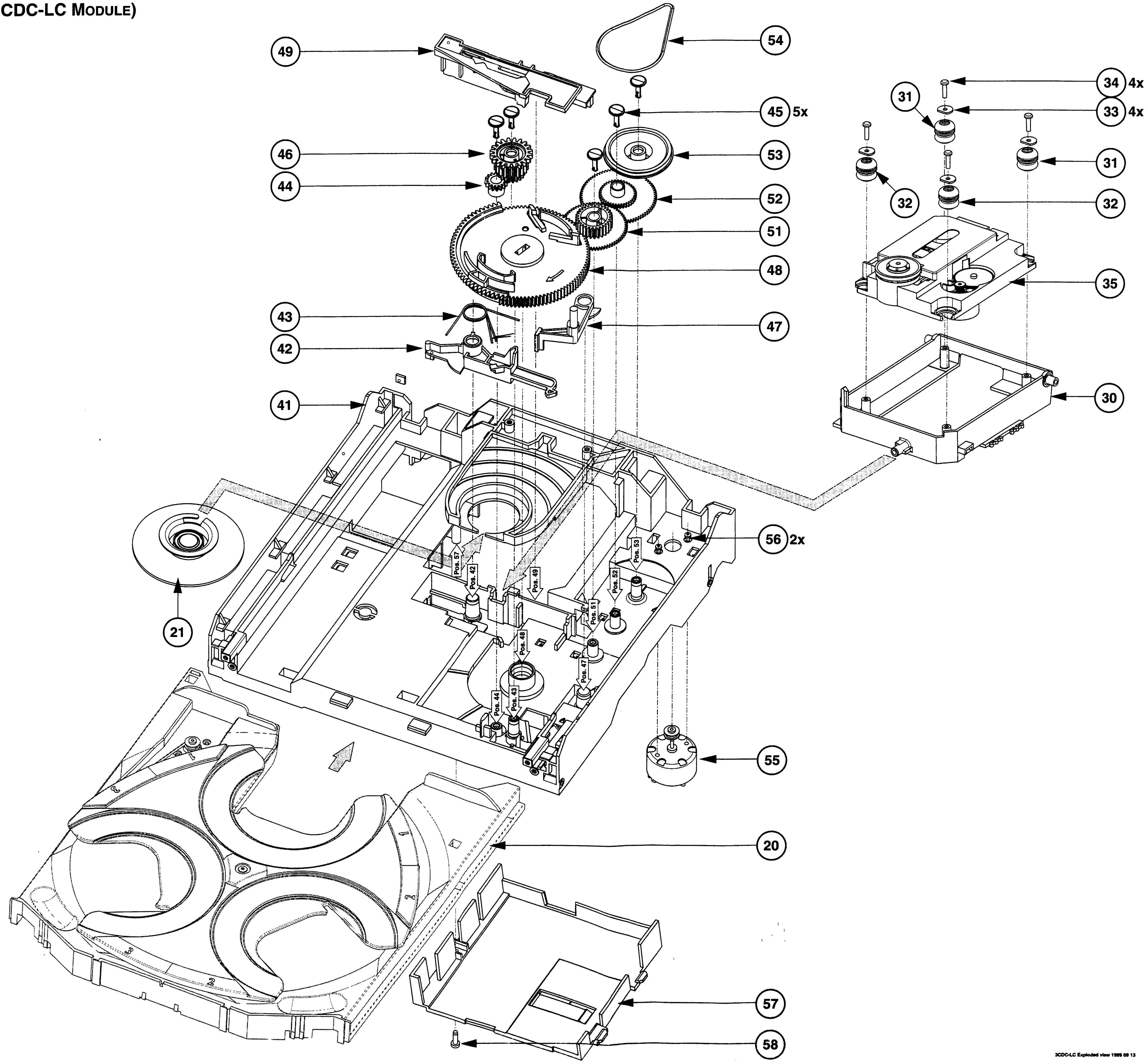
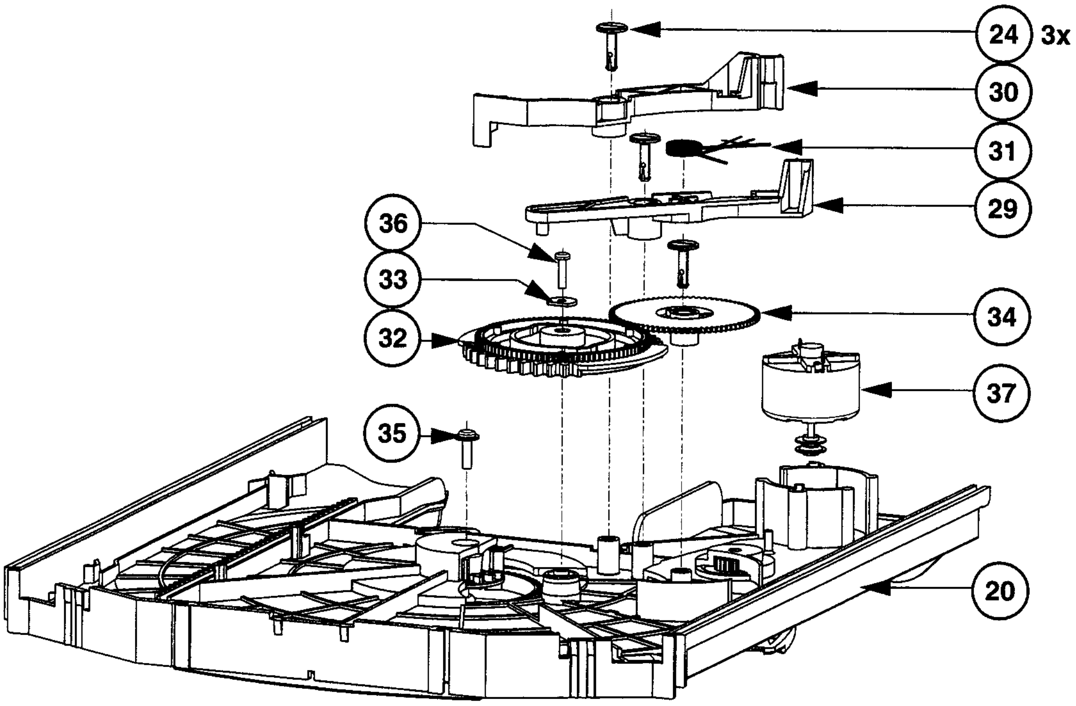
A
B
C
D
E
F
G
H
3CDC-LC-mainboard
part 2
digital out circuitry (not for all versions)
from 7877 on part1
DOBM
3809 330R
2864 22p
3716 470R
2854 47n
3717# 1R
4803#
5802 920927152B
3712 10R
COAX2
to 1805
COAX1
2865 22n
EBUGND
3868# 33R
+3.3V
From 7877 on part 1 (Signal Processor)
+5.6V
3864 100R
LP
3741 22K
LN
3740 22K
RP
3743 22K
RN
3742 22K
7805-B TDA1308T
2832 100p
2867 220p
3744 10K
2858 220u
4.5V
2V
2.3V
GNDA
7805-A TDA1308T
2831 100p
2882 220p
3746 10K
2860 10u
3854 100R
3858 22K
2861 10u
3855 100R
3859 22K
7850# BC857B
3772# 1K
7851# BC817-40
3770# 10K
3771# +3.3V
KILL_L
KILL_L_out
7860# BC857B
3782# 1K
7861# BC817-40
3780 10K
3781 +3.3V
KILL_R
KILL_R_out
3872# 10K
3874# 10K
3750 1K
3860 10K
2863 220p
3861 10K
2862 220p
3751 1K
2876 220u
2830 47n
to/from 7877 on part 1
SICL
SILD
SDA
7874 BC847B
3V-5V log. Levelconverter
3876 100K
3875 10K
+3.3V
voltage stab. 7875
3814 33R
4876
6876# BAS216
BC847B
6877 BZX284-C3V9
3899 100R
5.6V version only
+4V
+5V
+5.6V
+10V
5V(5.6V)
CAROUSEL-MOTOR
1876
8002
1875
POS1 rec
1882
RF-500TB
1883 POS rec
FE-ST-VK-N
1877
1878
DIPMATE
8003
DRAWER-MOTOR
7871 TDA7073A
4.9V
OUT1-
GGV
2829 22n
3884 270R
3885 10K
3882 47K
3883 10K
3851 3R3
+10V
2873 47u
3887 220R
3879 100K
2875 10u
3880 3K9
3881 100K
3886 47K
7873 HEF4094BT
Changer Control logic
VSS
6873 BAS216
6878 BAS216
6872 BAS216
6871 BAS216
1881
1880
DRIVE UP/DOWN
TRAY POS
SRG8
STB
STR
EN1
CP
VDD
5.1V
3891 1K
3890 1K
3878 10K
3893 470R
2877 47p
2878 220p
2893 220p
3877 10K
3871 10K
3888 10K
3898 220R
6875 BZX284-C5V1
2881 4u7
3714 10K
3713 22K
7812 BC847B
Output enable delay circuitry
6874 BAS216
3715 100K
2872 47n
CD-Text circuitry (not for all versions)
From 7877 on part 1 (Signal Processor)
RCK
SUB
SBSY
SFSY
CL11
7.35KHz
3730 33K
3731 10K
3732 470R
3733 470R
3734 470R
3700 470R
3718 4K7
2853 22n
7876 LC89170M
EXCK
SBSO
SCOR
WFCK
MCK
XMODE
GND
32 x 8 2 PORT RAM
CPU INTERF
CRC CHECK
TIMING & SYNC PROTECTION
VDD
DQSY
SRDT
SCLK
SW2
SW1
TEST
11MHz
2852 47n
220R 3705
3831 100R
+5.6V
6879 BZX284-C3V9
3711 10K
3706 470R
3707 470R
3708 470R
CD-TEXT INFO
DQSY
3.3ms
SCLK
SRDT
only during TOC-reading
to combi-board
1805
LEFT
GNDA
RIGHT
+5V(+5.6V)
GND
+10V
SW_INFO
SHR_STR
SHR_CL
SICL
DATA
SILD
GND
PORE
KILL_L
COAX1/+3V
COAX2/EBU
EBU_GND
GND/KILL_R
SRDT
DQSY
uP_CLK
GND
BASIC VERSION (15 Pin)
DIGout (3 Pin)
CD-TEXT (23 Pin)
to 7877 on part 1 PORE
from digital-out circuitry COAX1
KILL_R_out
4813#
COAX2
4827
4849
KILL_L_out
FE-ST-VK-N
EVM
...DC voltages measured in Play mode

EXPLODED VIEW (3CDC-LC MODULE)


49
54
34 4x
45 5x
33 4x
31
46
53
31
44
52
32
32
51
48
35
43
47
42
30
41
56 2x
Pos. 57
Pos. 42
Pos. 49
Pos. 53
Pos. 52
Pos. 51
Pos. 48
Pos. 47
Pos. 44
Pos. 43
21
55
20
57
58

3CDC-LC Exploded view 1999 09 13

Drawer bottom view


24
3x
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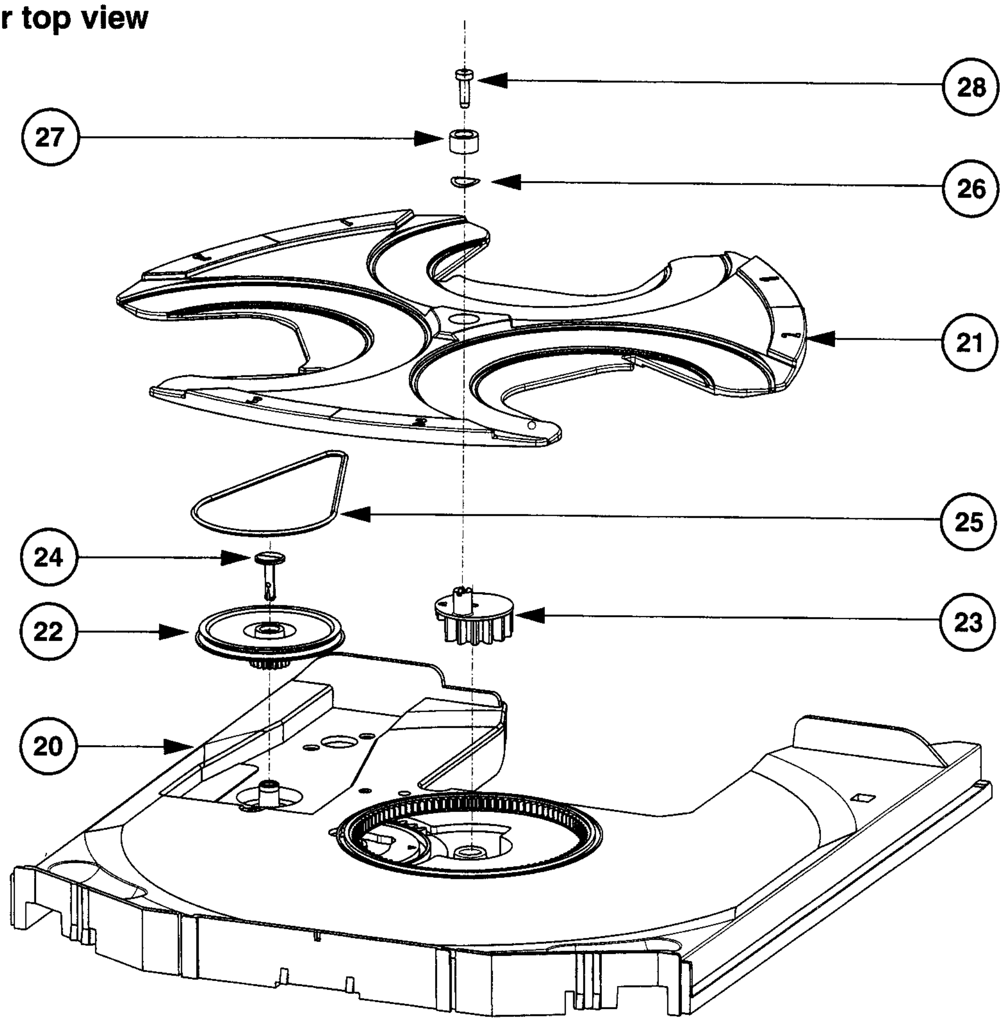
Drawer top view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CD-LC Drawer assy 1999 09 13

MECHANICAL PARTS LIST - 3CDC-LC DRAWER ASSEMBLY (Page 10-11)

0020	310330466500	DRAWER
0021	310330466490	CARROUSELL
0022	310330406860	PULLEY-DRAWER
0023	310330406850	ECCENTRIC
0024	310330406980	NAIL
0025	310330466850	DRIVING-BELT-CARROUSEL
0027	482253212365	BUSH DRAWER
0027	310330407100	BUSH DRAWER / BWC Version
0029	310330466550	BRACKET-DISC
0030	310330466520	TUMBLER
0031	310330106470	SPRING-DISC
0032	310330406920	CONTROL-DISC
0033	310330406970	WASHER
0034	310330406870	GEAR-1
0037	482236110753	MOTOR ASSY

MECHANICAL PARTS LIST - 3CDC-LC MODULE (Page 10-10)

0021	314011758650	CLAMPER ASSY-VAM
0030	310330466560	SUPPORT
0031	482252910431	DAMPER - RUBBER (25DEG)
0032	482252910431	DAMPER - RUBBER (25DEG)
0033	310330406970	WASHER
0035	482269110772	VAM2201/01
0041	310330466480	FRAME
0042	310330466540	BRACKET-GUIDING
0043	310330106460	SPRING-GUIDING
0044	310330406890	GEAR-3
0045	310330406980	NAIL
0046	310330406880	GEAR-2
0047	310330466530	BRACKET-LOAD
0048	310330406910	CAM
0049	310330466510	GUIDING
0051	310330406900	GEAR-4
0052	310330406870	GEAR-1
0053	310330406960	PULLEY-FRAME
0054	310330466910	DRIVING-BELT-DRAWER
0055	482236110753	MOTOR ASSY
0056	482250212548	SCREW M2,6X2,9
0057	310330468890	COVER-VAM
0059	482246612146	RUBBER

ELECTRICAL PARTS LIST - 3CDC-LC MODULE

MISCELLANEOUS

1800	482226510925	Flex Foil Connector 15P
1805	482226510979	Flex Foil Connector 15P
1805	482226511545	Flex Foil Connector 19P
1805	482226511182	Flex Foil Connector 23P
1810	482224210849	RES XTL 8MHz4672
1810	482224273557	RES CER 8MHz467
1875	482226710958	Flex Foil Connector 5P
1876	242202508332	Flex Foil Connector 5P
1880	482227613503	Switch
1881	482227613503	Switch
1882	482227613503	Switch
1883	482227613503	Switch
8002	310330891990	Flex Foil 5P 200mm
8005	310330891980	Flex Foil 15P 170mm

CAPACITORS

2800	482212610326	180pF 5% 63V
2801	482212233575	220pF 5% 63V
2802	482212610326	180pF 5% 63V
2803	482212233575	220pF 5% 63V
2805	482212233575	220pF 5% 63V
2806	482212233575	220pF 5% 63V
2807	532212231863	330pF 5% 63V
2808	482212233575	220pF 5% 63V
2809	532212441948	470nF 20% 50V
2810	482212610326	180pF 5% 63V
2811	482212233575	220pF 5% 63V
2815	482212614076	220nF +80/-20% 25V
2816	482212613344	1,5nF 5% 63V
2818	482212613344	1,5nF 5% 63V
2822	222286115222	2,2nF 5% 50V
2823	482212613692	47pF 1% 63V
2824	482212613751	47nF 10% 63V
2825	482212233177	10nF 20% 50V
2826	482212412362	47µF 20% 4V
2828	482212412362	47µF 20% 4V
2829	532212232654	22nF 10% 63V
2830	482212613751	47nF 10% 63V
2831	532212232531	100pF 5% 50V
2832	532212232531	100pF 5% 50V
2833	532212232659	33pF 5% 50V
2834	532212232659	33pF 5% 50V
2835	482212613751	47nF 10% 63V
2837	482212440433	47µF 20% 25V
2838	482212440248	10µF 20% 63V
2839	482212440433	47µF 20% 25V

ELECTRICAL PARTS LIST - 3CDC-LC MODULE

CAPACITORS

2840	482212614585	100nF 10% 50V
2841	482212233216	270pF 5% 50V
2842	482212233127	2,2nF 10% 63V
2844	482212233216	270pF 5% 50V
2849	482212440769	4,7µF 20% 100V
2850	532212231647	1nF 10% 63V
2851	482212442383	220µF 20% 4V
2852	482212613751	47nF 10% 63V
2853	532212232654	22nF 10% 63V
2854	482212613751	47nF 10% 63V
2855	532212234099	470pF 10% 63V
2856	482212613691	27pF 1% 63V
2857	482212233177	10nF 20% 50V
2858	482212412245	220µF 20%
2859	482212233177	10nF 20% 50V
2860	482212411947	10µF 20% 16V
2861	482212411947	10µF 20% 16V
2862	482212233575	220pF 5% 63V
2863	482212233575	220pF 5% 63V
2864	532212232658	22pF 5% 50V
2865	532212232654	22nF 10% 63V
2867	482212233575	220pF 5% 63V
2869	482212613751	47nF 10% 63V
2872	482212613751	47nF 10% 63V
2873	482212480231	47µF 20% 16V
2875	482212411947	10µF 20% 16V
2876	482212412245	220µF 20%
2877	482212613692	47pF 1% 63V
2878	482212233575	220pF 5% 63V
2879	482212613751	47nF 10% 63V
2881	482212440769	4,7µF 20% 100V
2882	482212233575	220pF 5% 63V
2884	482212440769	4,7µF 20% 100V
2885	482212440769	4,7µF 20% 100V
2887	482212614585	100nF 10% 50V
2888	482212440769	4,7µF 20% 100V
2891	532212231865	1,5nF 10% 63V
2892	532212610223	4,7nF 10% 63V
2893	482212233575	220pF 5% 63V

RESISTORS

3700	482205120471	470R 5% 0,1W
3705	482211711503	220R 1% 0,1W
3706	482205120471	470R 5% 0,1W
3707	482205120471	470R 5% 0,1W
3708	482205120471	470R 5% 0,1W
3709	482205120108	1R 5% 0,1W
3711	482211710833	10k 1% 0,1W
3712	482205120109	10R 5% 0,1W
3713	482205120223	22k 5% 0,1W
3714	482211710833	10k 1% 0,1W
3715	482211710837	100k 1% 0,1W
3716	482205120471	470R 5% 0,1W
3718	482205120472	4k7 5% 0,1W
3727	482205120472	4k7 5% 0,1W
3728	482205120472	4k7 5% 0,1W
3730	482205120333	33k 5% 0,1W
3731	482211710833	10k 1% 0,1W
3732	482205120471	470R 5% 0,1W
3733	482205120471	470R 5% 0,1W
3734	482205120471	470R 5% 0,1W
3740	482205120223	22k 5% 0,1W
3741	482205120223	22k 5% 0,1W
3742	482205120223	22k 5% 0,1W
3743	482205120223	22k 5% 0,1W
3744	482211710833	10k 1% 0,1W
3746	482211710833	10k 1% 0,1W
3750	482205110102	1k 2% 0,25W
3751	482205110102	1k 2% 0,25W
3800	482211711148	56k 1% 0,1W
3801	482211710833	10k 1% 0,1W
3802	482211711148	56k 1% 0,1W
3803	482211710833	10k 1% 0,1W
3804	482211710833	10k 1% 0,1W
3805	482211710833	10k 1% 0,1W
3806	482211710833	10k 1% 0,1W
3807	482211710833	10k 1% 0,1W
3808	482211710833	10k 1% 0,1W
3809	482211713577	330R 1% 1,25W
3811	482211710965	18k 1% 0,1W
3812	482205310228	2R2 5% 1W
3814	482205120339	33R 5% 0,1W
3815	482205210478	⚠ 4R7 5% 0,33W
3819	482205120471	470R 5% 0,1W
3820	482205120472	4k7 5% 0,1W
3821	482205120472	4k7 5% 0,1W
3822	482211712955	2k7 1% 0,1W
3823	482205110102	1k 2% 0,25W
3824	482205110102	1k 2% 0,25W
3825	482205110102	1k 2% 0,25W
3826	482205120223	22k 5% 0,1W
3827	482205120333	33k 5% 0,1W
3828	482205120223	22k 5% 0,1W
3831	482205120101	100R 5% 0,1W
3832	482211710833	10k 1% 0,1W
3833	482205120223	22k 5% 0,1W
3834	482205120223	22k 5% 0,1W
3835	482205210338	⚠ 3R3 5% 0,33W
3837	482205110102	1k 2% 0,25W
3838	482205110102	1k 2% 0,25W
3839	482211710837	100k 1% 0,1W
3840	482211710837	100k 1% 0,1W
3841	482205120472	4k7 5% 0,1W
3842	482211710834	47k 1% 0,1W
3843	482205120333	33k 5% 0,1W
3844	482205120472	4k7 5% 0,1W

ELECTRICAL PARTS LIST - 3CDC-LC MODULE

RESISTORS

3845	482211710834	47k 1% 0,1W
3846	482205120333	33k 5% 0,1W
3847	482211711507	6k8 1% 0,1W
3848	482211710837	100k 1% 0,1W
3849	482211710837	100k 1% 0,1W
3850	482205120392	3k9 5% 0,1W
3851	482205210338	⚠ 3R3 5% 0,33W
3852	482205210228	⚠ 2R2 5% 0,33W
3853	482205120471	470R 5% 0,1W
3854	482205120101	100R 5% 0,1W
3855	482205120101	100R 5% 0,1W
3856	482211712521	68R 1% 0,1W
3857	482211712521	68R 1% 0,1W
3858	482205120223	22k 5% 0,1W
3859	482205120223	22k 5% 0,1W
3860	482211710833	10k 1% 0,1W
3861	482211710833	10k 1% 0,1W
3862	482205120121	120R 5% 0,1W
3863	482205120101	100R 5% 0,1W
3863	482205120339	33R 5% 0,1W
3864	482205120101	100R 5% 0,1W
3866	482211710833	10k 1% 0,1W
3867	482205120121	120R 5% 0,1W
3869	482205120478	4R7 5% 0,1W
3870	482205120101	100R 5% 0,1W
3871	482211710833	10k 1% 0,1W
3873	482205120471	470R 5% 0,1W
3875	482211710833	10k 1% 0,1W
3876	482211710837	100k 1% 0,1W
3877	482211710833	10k 1% 0,1W
3878	482211710833	10k 1% 0,1W
3879	482211710837	100k 1% 0,1W
3880	482205120392	3k9 5% 0,1W
3881	482211710837	100k 1% 0,1W
3882	482211710834	47k 1% 0,1W
3883	482211710833	10k 1% 0,1W
3884	482211711504	270R 1% 0,1W
3885	482211710833	10k 1% 0,1W
3886	482211710834	47k 1% 0,1W
3887	482211711503	220R 1% 0,1W
3888	482211710833	10k 1% 0,1W
3889	482205120471	470R 5% 0,1W
3890	482205110102	1k 2% 0,25W
3891	482205110102	1k 2% 0,25W
3892	482205120471	470R 5% 0,1W
3893	482205120471	470R 5% 0,1W
3894	482205120101	100R 5% 0,1W
3895	482205120159	15R 5% 0,1W
3897	482205120101	100R 5% 0,1W
3898	482211711503	220R 1% 0,1W
3899	482205120101	100R 5% 0,1W
4800	482205120008	0R Jumper 0805
4801	482205120008	0R Jumper 0805
4802	482205120008	0R Jumper 0805
4804	482205120008	0R Jumper 0805
4805	482205120008	0R Jumper 0805
4806	482205120008	0R Jumper 0805
4807	482205120008	0R Jumper 0805
4808	482205120008	0R Jumper 0805
4810	482205120008	0R Jumper 0805
4812	482205120008	0R Jumper 0805
4817	482205120008	0R Jumper 0805
4818	482205120008	0R Jumper 0805
4819	482205120008	0R Jumper 0805
4820	482205120008	0R Jumper 0805
4821	482205120008	0R Jumper 0805
4822	482205120008	0R Jumper 0805
4823	482205120008	0R Jumper 0805
4824	482205120008	0R Jumper 0805
4825	482205120008	0R Jumper 0805
4826	482205120008	0R Jumper 0805
4827	482205120008	0R Jumper 0805
4828	482205120008	0R Jumper 0805
4830	482205120008	0R Jumper 0805
4831	482205120008	0R Jumper 0805
4832	482205120008	0R Jumper 0805
4833	482205120008	0R Jumper 0805
4834	482205120008	0R Jumper 0805
4835	482205120008	0R Jumper 0805
4836	482205120008	0R Jumper 0805
4837	482205120008	0R Jumper 0805
4838	482205120008	0R Jumper 0805
4839	482205120008	0R Jumper 0805
4840	482205120008	0R Jumper 0805
4841	482205120008	0R Jumper 0805
4842	482205120008	0R Jumper 0805
4843	482205120008	0R Jumper 0805
4844	482205120008	0R Jumper 0805
4845	482205120008	0R Jumper 0805
4846	482205120008	0R Jumper 0805
4847	482205120008	0R Jumper 0805
4848	482205120008	0R Jumper 0805
4849	482205120008	0R Jumper 0805
4876	482205120008	0R Jumper 0805

COILS & FILTERS

5802	482215631058	100µH

DIODES

6871	482213083757	BAS216
6872	482213083757	BAS216
6873	482213083757	BAS216
6874	482213083757	BAS216
6875	482213011383	BZX284-C5V1
6877	482213011366	BZX284-C3V9
6878	482213083757	BAS216

ELECTRICAL PARTS LIST - 3CDC-LC MODULE

DIODES

6879	482213011366	BZX284-C3V9

TRANSISTORS & INTEGRATED CIRCUITS

7801	935262236118	IC SM TZA1025T/V2
7805	482220933165	TDA1308T/N1
7806	482220932852	TDA7073A/N2
7807	482220932852	TDA7073A/N2
7812	482213060511	BC847B
7871	482220932852	TDA7073A/N2
7873	532220911306	HEF4094BT
7874	482213060511	BC847B
7875	482213060511	BC847B
7876	482220916143	LC89170M
7877	482220917324	SAA7325H

Note: Only the parts mentioned in this list are normal service spare parts.

3CDC-LC-MB Module

(3 Disc Carousel Changer)

Note:
This module is mechanically the same as the 3CDC-LC Module.
All service information refers to Chapter 10 except the schematics, layouts & electrical parts list related to the CDC board.
The CDC board can be recognized by 12NC: 3103 303 34522 printed on the board.

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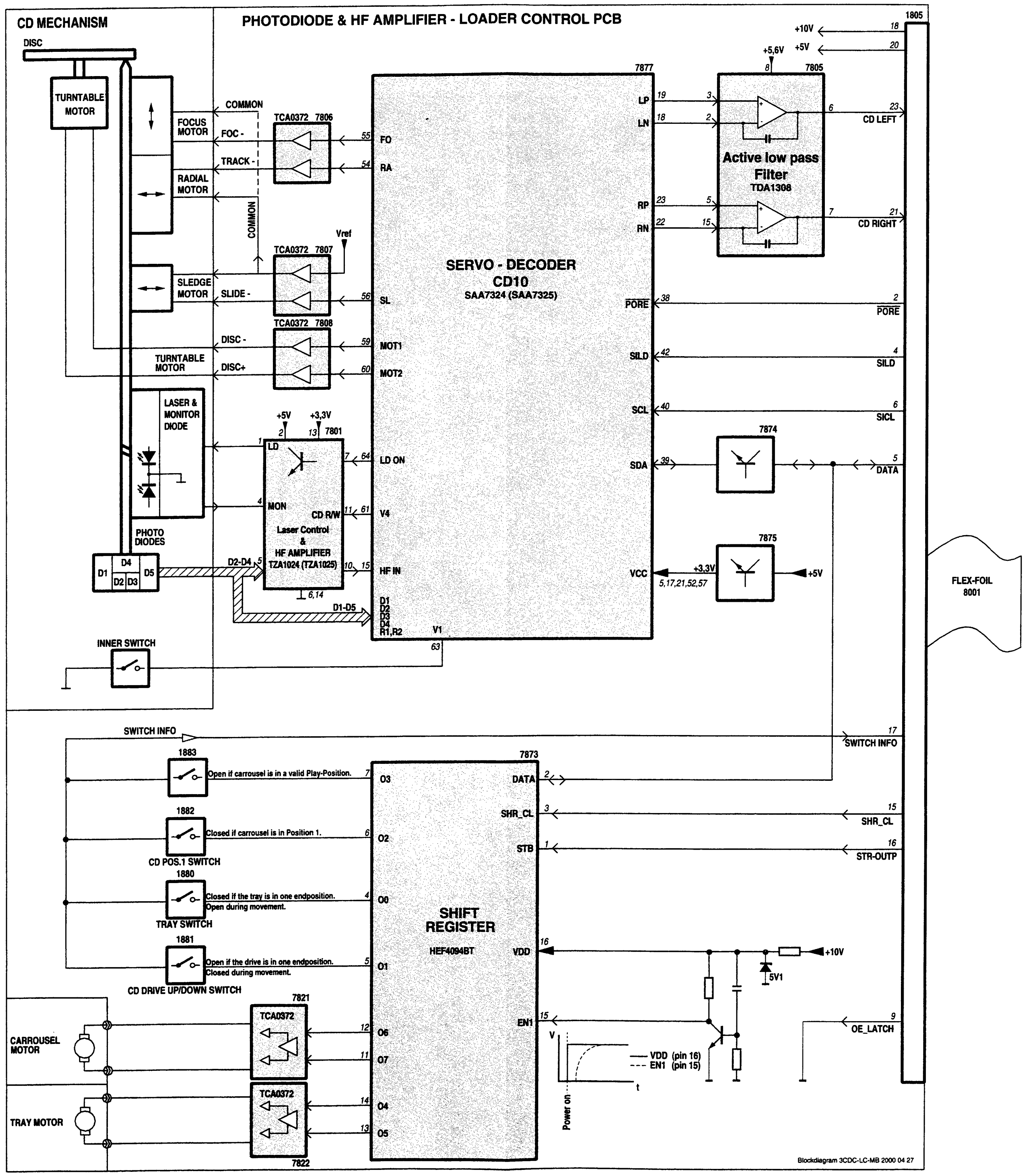
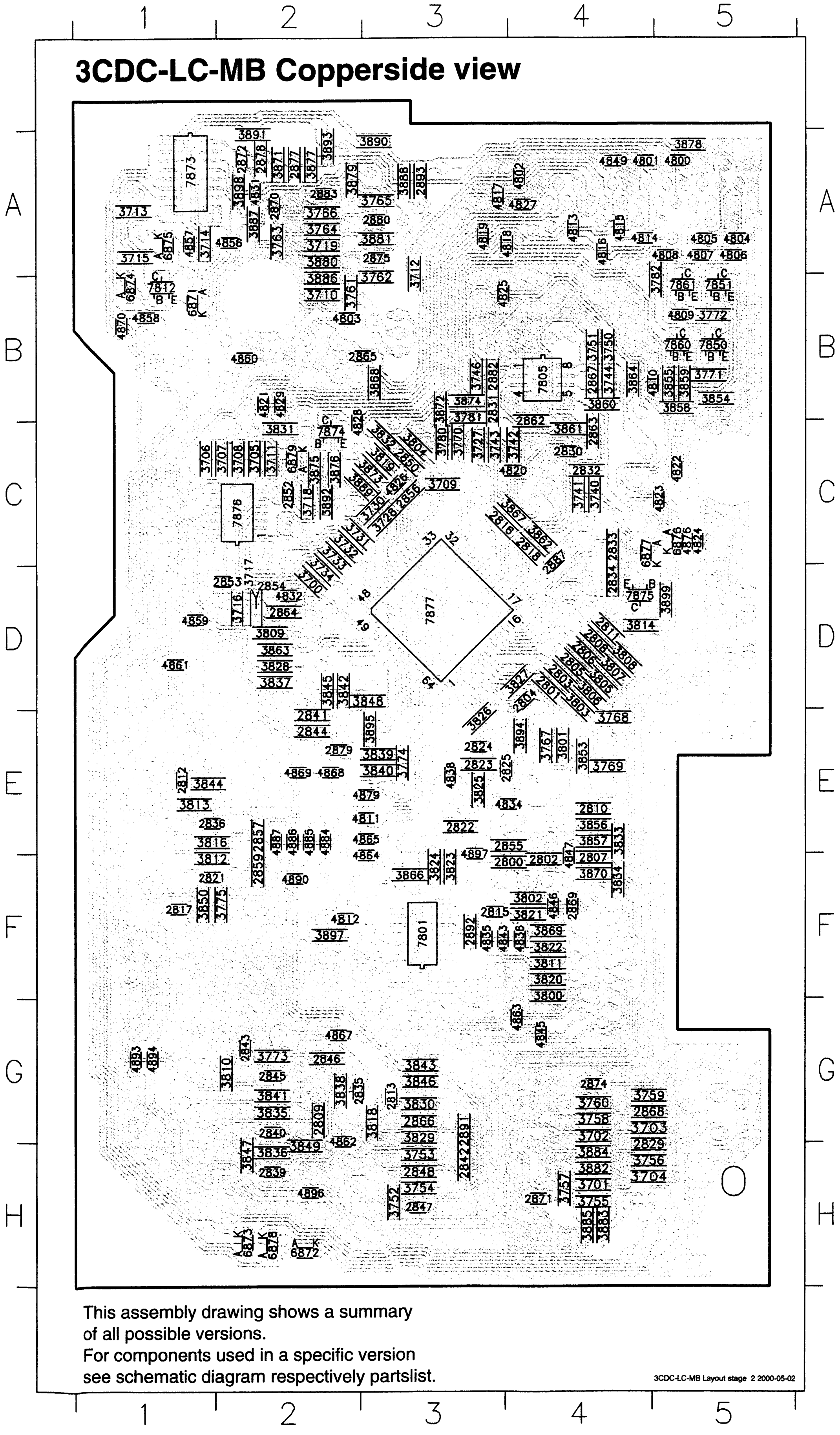
Circuit diagram Part 1 .... 10A-3
CDC Board component & copper side views 10A-4
Circuit diagram Part 2 .... 10A-5
Electrical parts list 10A-6

3CDC-LC-MB BLOCK DIAGRAM

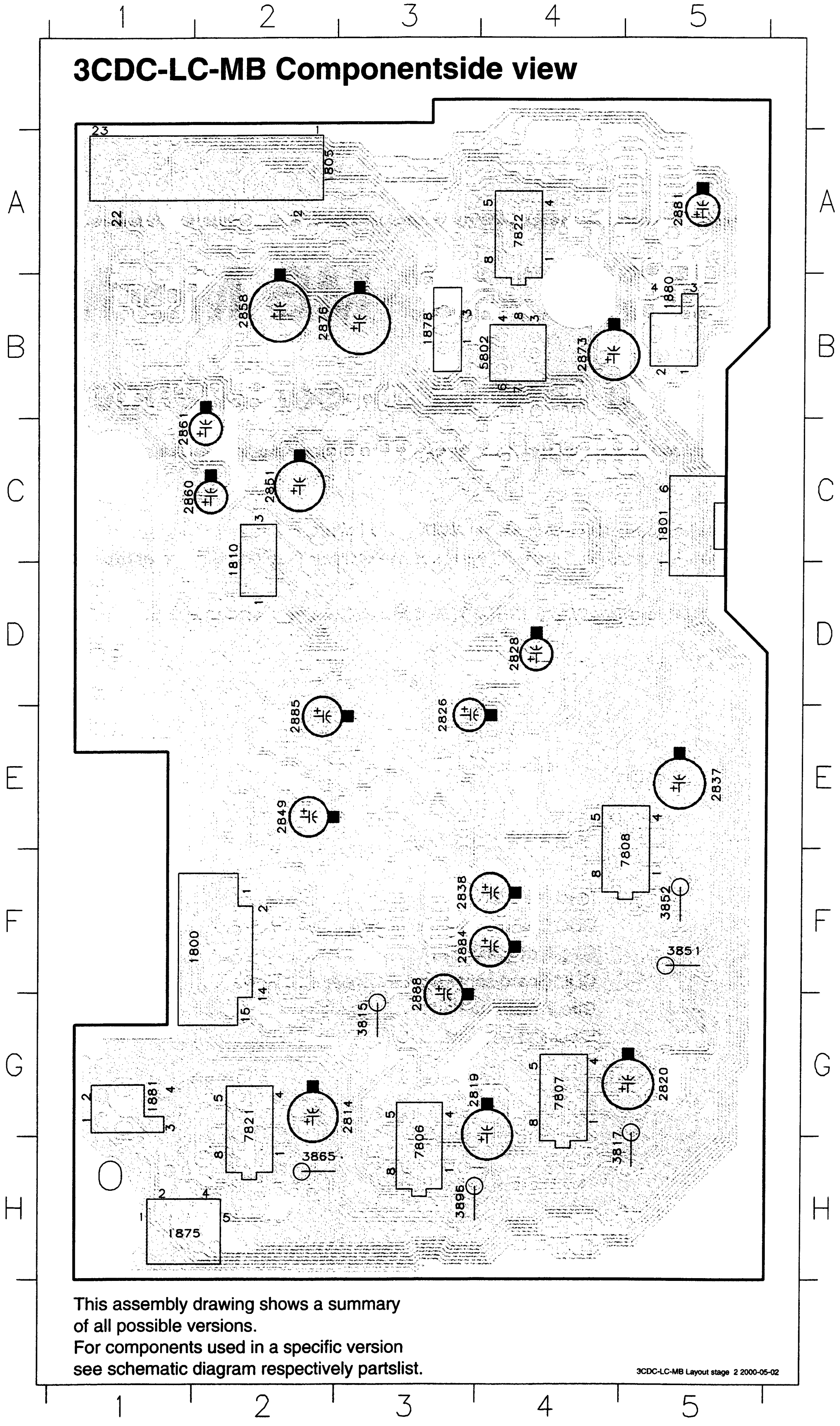

CD MECHANISM
DISC
TURNTABLE MOTOR
FOCUS MOTOR
RADIAL MOTOR
SLEDGE MOTOR
TURNTABLE MOTOR
LASER & MONITOR DIODE
PHOTO DIODES
D1
D2
D3
D4
D5
INNER SWITCH
PHOTODIODE & HF AMPLIFIER - LOADER CONTROL PCB
COMMON
FOC -
TRACK -
COMMON
SLIDE -
DISC -
DISC+
TCA0372 7806
TCA0372 7807
TCA0372 7808
Vref
+5V
+3,3V
7801
LD
MON
CD R/W
Laser Control & HF AMPLIFIER TZA1024 (TZA1025)
D2-D4
D1-D5
6,14
SERVO - DECODER
CD10
SAA7324 (SAA7325)
7877
FO
RA
SL
MOT1
MOT2
LD ON
V4
HF IN
D1 D2 D3 D4 R1,R2
V1
LP
LN
RP
RN
PORE
SILD
SCL
SDA
VCC
5,17,21,52,57
Active low pass Filter
TDA1308
7805
+5,6V
+10V
+5V
CD LEFT
CD RIGHT
PORE
SILD
SICL
DATA
7874
7875
1805
FLEX-FOIL 8001
SWITCH INFO
1883
Open if carrousel is in a valid Play-Position.
1882
Closed if carrousel is in Position 1.
CD POS.1 SWITCH
1880
Closed if the tray is in one endposition.
Open during movement.
TRAY SWITCH
1881
Open if the drive is in one endposition.
Closed during movement.
CD DRIVE UP/DOWN SWITCH
7873
SHIFT REGISTER
HEF4094BT
O3
O2
O0
O1
O6
O7
O4
O5
DATA
SHR_CL
STB
VDD
EN1
SWITCH INFO
SHR_CL
STR-OUTP
OE_LATCH
+10V
5V1
V
t
Power on
— VDD (pin 16)
--- EN1 (pin 15)
CARROUSEL MOTOR
TRAY MOTOR
TCA0372
7821
7822
Blockdiagram 3CDC-LC-MB 2000 04 27



3CDC-LC-MB Copperside view

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

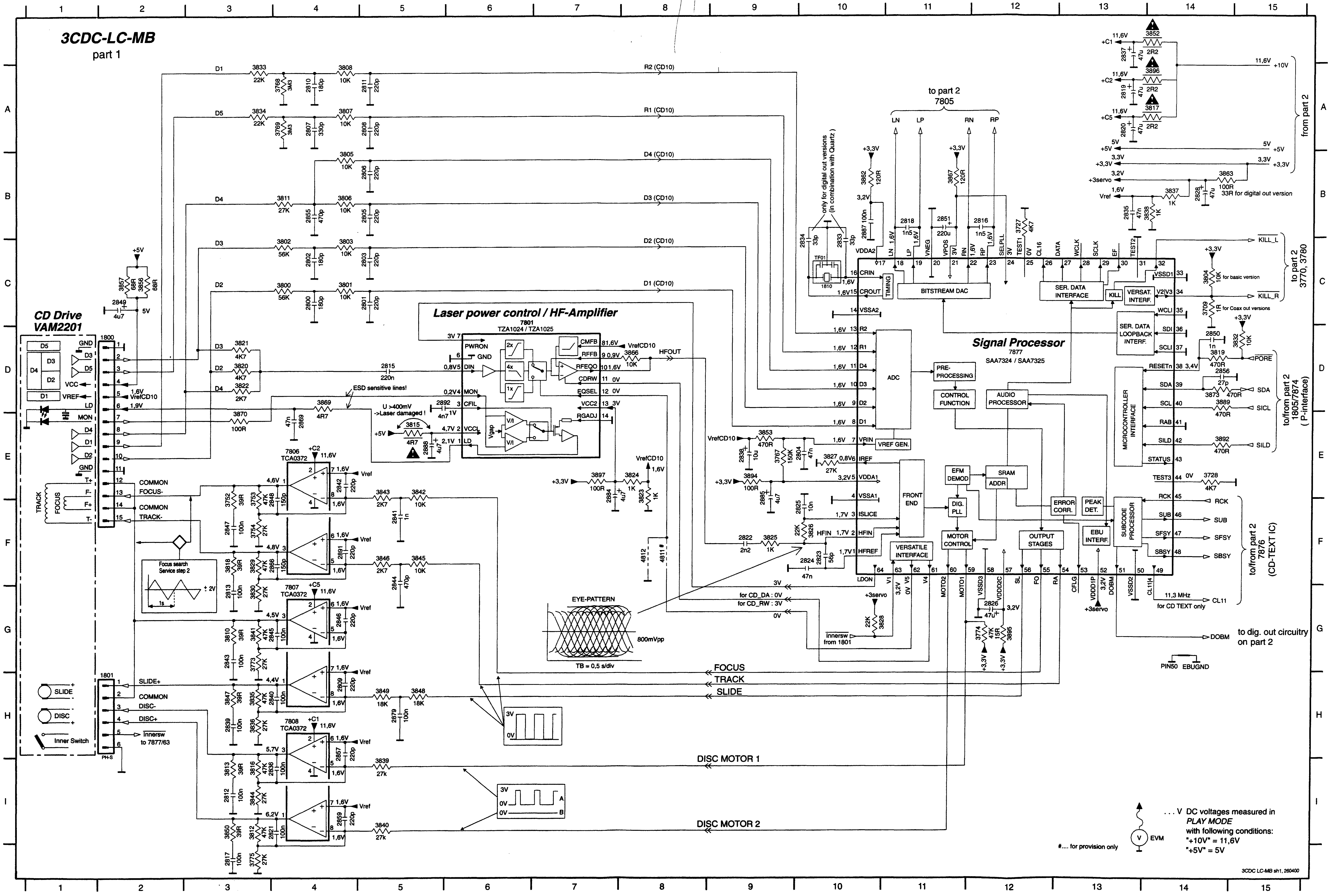
Copper side			Component side
2800 F4	3751 B4	3883 H4	1800 F1
2801 D4	3752 H3	3884 H4	1801 C5
2802 F4	3753 H3	3885 H4	1805 A2
2803 D4	3754 H3	3886 B2	1810 C2
2804 D4	3755 H4	3887 A2	1875 H1
2805 D4	3756 H4	3888 A3	1878 B3
2806 D4	3757 H4	3889 C2	1880 B5
2807 F4	3758 G4	3890 A3	1881 G1
2808 D4	3759 G4	3891 A2	2814 G3
2809 G2	3760 G4	3892 C2	2819 G3
2810 E4	3761 B2	3893 A2	2820 G5
2811 D4	3762 B3	3894 E4	2826 E3
2812 E1	3763 A2	3895 E3	2828 D4
2813 G3	3764 A2	3897 F2	2837 E5
2815 F3	3765 A3	3898 A2	2838 F3
2816 C3	3766 A2	3899 D5	2849 E2
2817 F1	3767 E4	4800 A5	2851 C2
2818 C4	3768 E4	4801 A4	2858 B2
2821 F1	3769 E4	4802 A4	2860 C1
2822 E3	3770 C3	4803 B2	2861 C1
2823 E3	3771 B5	4804 A5	2873 B4
2824 E3	3772 B5	4805 A5	2876 B2
2825 E3	3773 G2	4806 A5	2881 A5
2829 H4	3774 E3	4807 A5	2884 F3
2830 C4	3775 F2	4808 A5	2885 E2
2831 B3	3780 C3	4809 B5	2888 G3
2832 C4	3781 B3	4810 B4	3815 G3
2833 C4	3782 B5	4811 E3	3817 H4
2834 D4	3800 F4	4812 F2	3851 F5
2835 G2	3801 E4	4813 A4	3852 F5
2836 E1	3802 F4	4814 A4	3865 H2
2839 H2	3803 D4	4815 A4	3896 H3
2840 G2	3804 C3	4816 A4	5802 B4
2841 E2	3805 D4	4817 A3	7806 H3
2842 H3	3806 D4	4818 A3	7807 G4
2843 G2	3807 D4	4819 A3	7808 E4
2844 E2	3808 D4	4820 C4	7821 G2
2845 G2	3809 D2	4821 B2	7822 A3
2846 G2	3810 G2	4822 C5	
2847 H3	3811 F4	4823 C5	
2848 H3	3812 F1	4824 C5	
2850 C3	3813 E1	4825 B3	
2852 C2	3814 D4	4826 C3	
2853 D2	3816 E1	4827 A4	
2854 D2	3818 G3	4828 C2	
2855 E4	3819 C3	4829 B2	
2856 C3	3820 F4	4831 A2	
2857 E2	3821 F4	4832 D2	
2859 F2	3822 F4	4834 E4	
2862 C4	3823 F3	4835 F3	
2863 C4	3824 F3	4836 F4	
2864 D2	3825 E3	4838 E3	
2865 B3	3826 E3	4843 F3	
2866 G3	3827 D4	4845 G4	
2867 B4	3828 D2	4846 F4	
2868 G4	3829 G3	4847 F4	
2869 F4	3830 G3	4849 A4	
2870 A2	3831 C2	4856 A2	
2871 H4	3832 C3	4857 A1	
2872 A2	3833 E4	4858 B1	
2874 G4	3834 F4	4859 D1	
2875 A3	3835 G2	4860 B2	
2877 A2	3836 H2	4861 D1	
2878 A2	3837 D2	4862 G2	
2879 E2	3838 G2	4863 G4	
2880 A3	3839 E3	4864 F3	
2882 B3	3840 E3	4865 E3	
2883 A2	3841 G2	4867 G2	
2887 C4	3842 D2	4868 E2	
2891 G3	3843 G3	4869 E2	
2892 F3	3844 E1	4870 B1	
2893 A3	3845 D2	4876 C5	
3700 D2	3846 G3	4879 E3	
3701 H4	3847 H2	4884 E2	
3702 G4	3848 D3	4885 E2	
3703 G4	3849 H2	4886 E2	
3704 H4	3850 F1	4887 E2	
3705 C2	3853 E4	4890 F2	
3706 C1	3854 B5	4893 G1	
3707 C2	3855 B5	4894 G1	
3708 C2	3856 E4	4896 H2	
3709 C3	3857 E4	4897 F3	
3710 B2	3858 B5	6871 B1	
3711 C2	3859 B5	6872 H2	
3712 A3	3860 B4	6873 H2	
3713 A1	3861 C4	6874 B1	
3714 A1	3862 C4	6875 A1	
3715 A1	3863 D2	6876 C5	
3716 D2	3864 B4	6877 C4	
3717 D2	3866 F3	6878 H2	
3718 C2	3867 C4	6879 C2	
3719 A2	3868 B3	7801 F3	
3727 C3	3869 F4	7805 B4	
3728 C3	3870 F4	7812 B1	
3730 C3	3871 A2	7850 B5	
3731 C2	3872 B3	7851 B5	
3732 C2	3873 C3	7860 B5	
3733 C2	3874 B3	7861 B5	
3734 D2	3875 C2	7873 A1	
3740 C4	3876 C2	7874 C2	
3741 C4	3877 A2	7875 D4	
3742 C4	3878 A5	7876 C2	
3743 C3	3879 A2	7877 D3	
3744 B4	3880 A2		
3746 B3	3881 A3		
3750 B4	3882 H4		



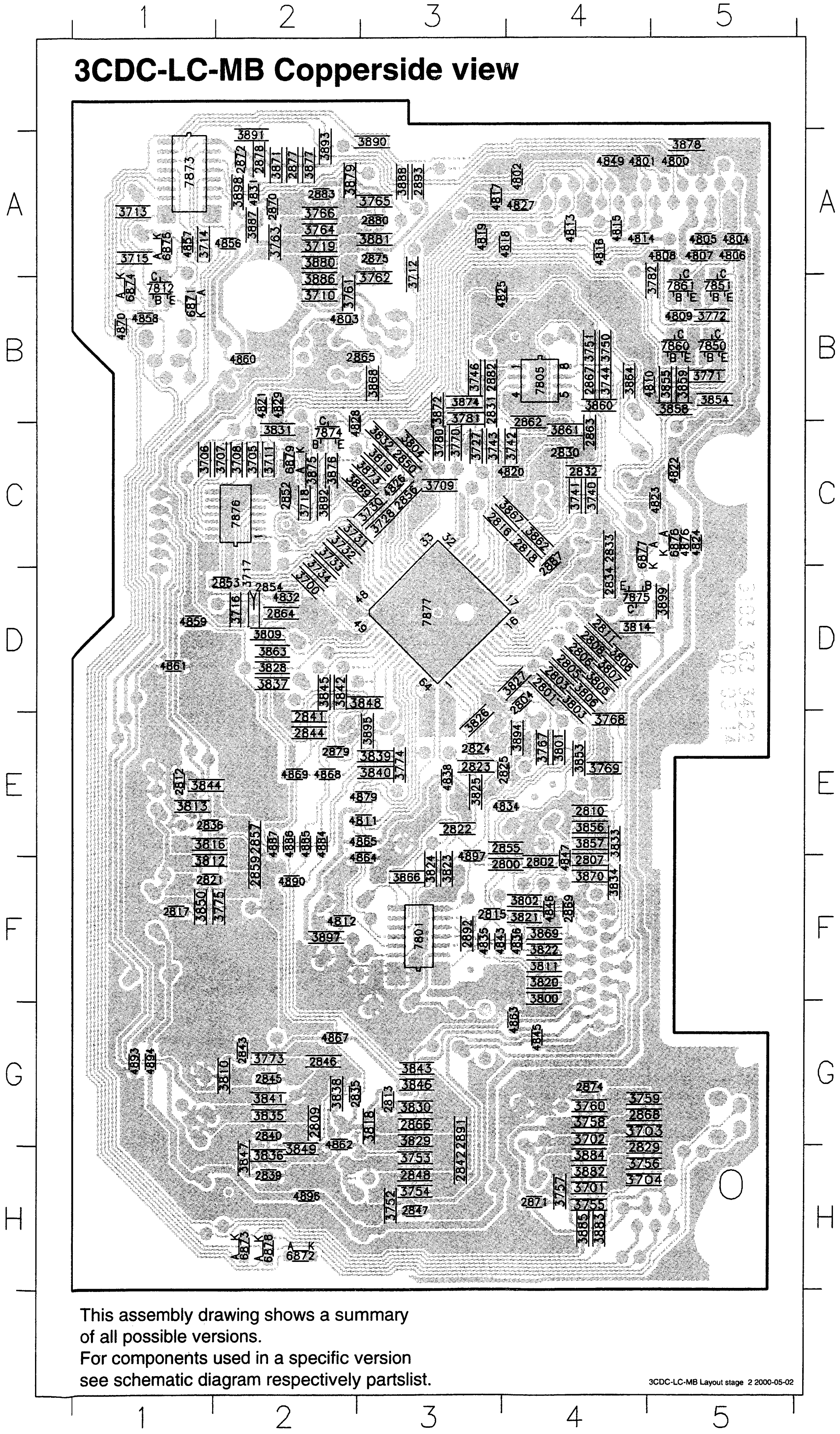
3CDC-LC-MB Componentside view

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

1800	D1
1801	G1
1810	C10
2800	C4
2801	C5
2802	C4
2803	C5
2804	E10
2805	B5
2806	B5
2807	A4
2808	A5
2809	H4
2810	A4
2811	A5
2812	I3
2813	G3
2815	D5
2816	B12
2817	I3
2818	B11
2819	A13
2820	A13
2821	I4
2822	F9
2823	F10
2824	F10
2825	F10
2826	G12
2828	B14
2833	C10
2834	C10
2835	B13
2836	I4
2837	A13
2838	E8
2839	H3
2840	H4
2841	F5
2842	E4
2843	G3
2844	F5
2845	G4
2846	G4
2847	F3
2848	F4
2849	C2
2850	D14
2851	B11
2855	B4
2856	D14
2857	H4
2859	I4
2866	F4
2869	E4
2879	H5
2884	E7
2885	F9
2887	B10
2888	E5
2891	F4
2892	D5
3709	C14
3727	B12
3728	E14
3752	F3
3753	F3
3754	F3
3767	E9
3768	A4
3769	A4
3773	G3
3774	G12
3775	I3
3600	C4
3801	C4
3802	C4
3803	C4
3804	C14
3805	B4
3806	B4
3807	A4
3808	A4
3810	G3
3811	B4
3812	I3
3813	I3
3815	E5
3816	I3
3817	A14
3818	F3
3819	D14
3820	D3
3821	D3
3822	D3
3823	E8
3824	E8
3825	F10
3826	F9
3827	E10
3828	G10
3829	F3
3830	G3
3832	D15
3833	A3
3834	A3
3835	H3
3836	H3
3837	B14
3838	B14
3839	I5
3840	I5
3841	G3
3842	E5
3843	E5
3844	I3
3845	F5
3846	F5
3847	H3
3848	H5
3849	H5
3850	I3
3852	A14
3853	E9
3856	C2
3857	C2
3862	B10
3863	B14
3866	D8
3867	B11
3869	D4
3870	E3
3873	D14
3889	D14
3892	E14
3894	E9
3895	G12
3896	A14
3897	E7
4811	F8
4812	F8
7801	E7
7806	E4
7807	G4
7808	H4
7877	D12


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H I
3CDC-LC-MB
part 1
CD Drive
VAM2201
Laser power control / HF-Amplifier
7801
TZA1024 / TZA1025
PWRON
GND
DIN
MON
CFIL
VCCL
LD
CMFB
RFFB
RFEQO
CDRW
EQSEL
VCC2
RGADJ
HFOUT
VrefCD10
ESD sensitive lines!
U >400mV
->Laser damaged !
Signal Processor
7877
SAA7324 / SAA7325
ADC
PRE-PROCESSING
CONTROL FUNCTION
AUDIO PROCESSOR
EFM DEMOD
SRAM
ADDR
DIG. PLL
MOTOR CONTROL
FRONT END
VERSATILE INTERFACE
OUTPUT STAGES
ERROR CORR.
PEAK DET.
EBU INTERF.
SUBCODE PROCESSOR
MICROCONTROLLER INTERFACE
SER. DATA LOOPBACK INTERF.
SER. DATA INTERFACE
KILL
VERSAT. INTERF.
BITSTREAM DAC
TIMING
VREF GEN.
to part 2
7805
LN LP RN RP
from part 2
+10V
+5V
+3,3V
+3servo
Vref
33R for digital out version
only for digital out versions (in combination with Quartz)
KILL_L
KILL_R
to part 2
3770, 3780
for basic version
for Coax out versions
PORE
SDA
SICL
SILD
to/from part 2
1805/7874
(P-interface)
RCK
SUB
SFSY
SBSY
CL11
11,3 MHz
for CD TEXT only
to/from part 2
7876
(CD-TEXT IC)
DOBM
to dig. out circuitry on part 2
PIN50 EBUGND
7806 TCA0372
7807 TCA0372
7808 TCA0372
COMMON
FOCUS-
TRACK-
SLIDE+
DISC-
DISC+
Innersw
to 7877/63
TRACK
FOCUS
SLIDE
DISC
Inner Switch
Focus search
Service step 2
EYE-PATTERN
800mVpp
TB = 0,5 s/div
for CD_DA : 0V
for CD_RW : 3V
Innersw
from 1801
FOCUS
TRACK
SLIDE
DISC MOTOR 1
DISC MOTOR 2
R2 (CD10)
R1 (CD10)
D4 (CD10)
D3 (CD10)
D2 (CD10)
D1 (CD10)
#.... for provision only
. . . V DC voltages measured in PLAY MODE
with following conditions:
"+10V" = 11,6V
"+5V" = 5V
EVM
3CDC LC-MB sh1, 260400

3CDC-LC-MB Copperside view



This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

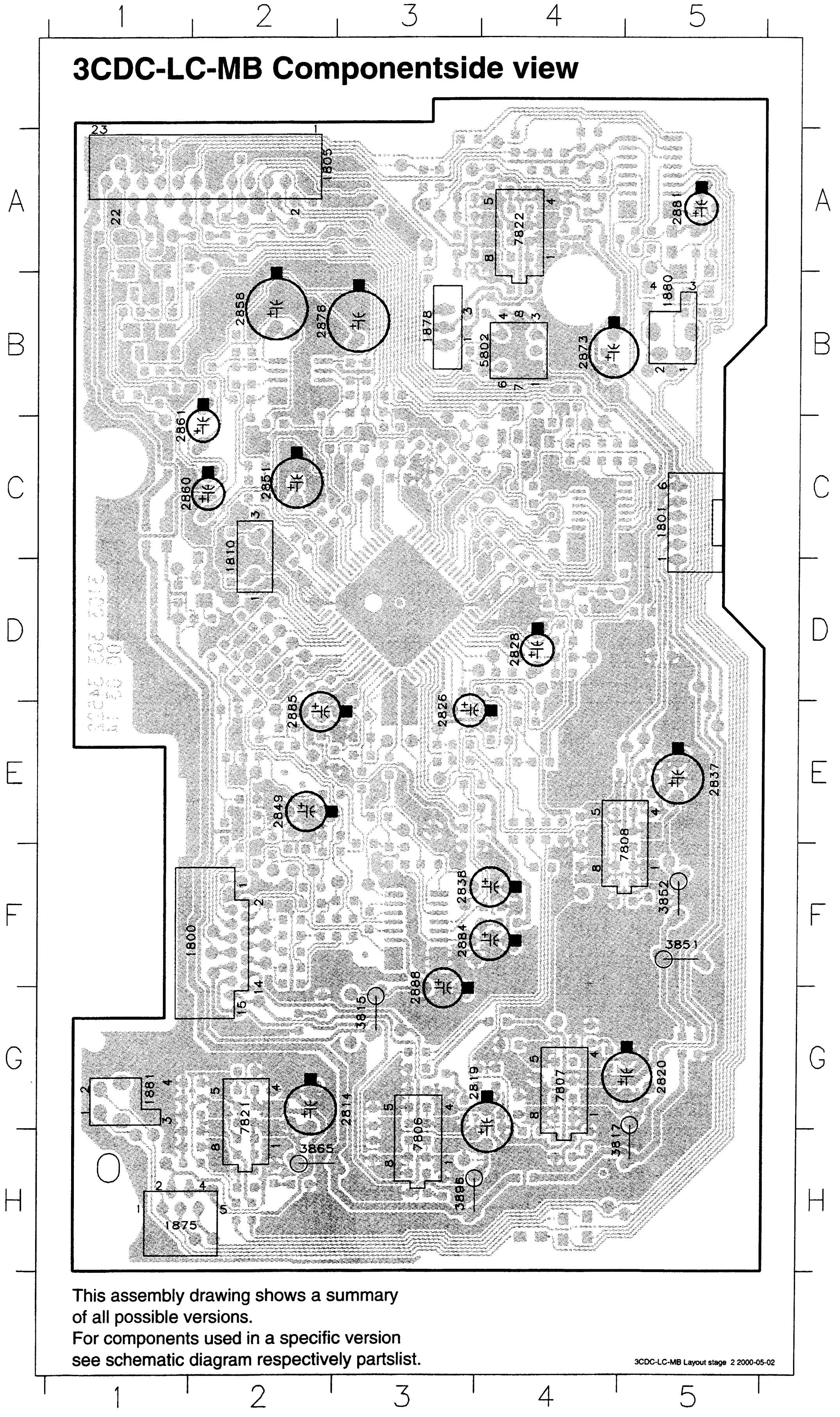
Copper side

2800	F4
2801	D4
2802	F4
2803	D4
2804	D4
2805	D4
2806	D4
2807	F4
2808	D4
2809	G2
2810	E4
2811	D4
2812	E1
2813	G3
2815	F3
2816	C3
2817	F1
2818	C4
2821	F1
2822	E3
2823	E3
2824	E3
2825	E3
2829	H4
2830	C4
2831	B3
2832	C4
2833	C4
2834	D4
2835	G2
2836	E1
2839	H2
2840	G2
2841	E2
2842	H3
2843	G2
2844	E2
2845	G2
2846	G2
2847	H3
2848	H3
2850	C3
2852	C2
2853	D2
2854	D2
2855	E4
2856	C3
2857	E2
2859	F2
2862	C4
2863	C4
2864	D2
2865	B3
2866	G3
2867	B4
2868	G4
2869	F4
2870	A2
2871	H4
2872	A2
2874	G4
2875	A3
2877	A2
2878	A2
2879	E2
2880	A3
2882	B3
2883	A2
2887	C4
2891	G3
2892	F3
2893	A3
3700	D2
3701	H4
3702	G4
3703	G4
3704	H4
3705	C2
3706	C1
3707	C2
3708	C2
3709	C3
3710	B2
3711	C2
3712	A3
3713	A1
3714	A1
3715	A1
3716	D2
3717	D2
3718	C2
3719	A2
3727	C3
3728	C3
3730	C3
3731	C2
3732	C2
3733	C2
3734	D2
3740	C4
3741	C4
3742	C4
3743	C3
3744	B4
3746	B3
3750	B4
3751	B4
3752	H3
3753	H3
3754	H3
3755	H4
3756	H4
3757	H4
3758	G4
3759	G4
3760	G4
3761	B2
3762	B3
3763	A2
3764	A2
3765	A3
3766	A2
3767	E4
3768	E4
3769	E4
3770	C3
3771	B5
3772	B5
3773	G2
3774	E3
3775	F2
3780	C3
3781	B3
3782	B5
3800	F4
3801	E4
3802	F4
3803	D4
3804	C3
3805	D4
3806	D4
3807	D4
3808	D4
3809	D2
3810	G2
3811	F4
3812	F1
3813	E1
3814	D4
3816	E1
3818	G3
3819	C3
3820	F4
3821	F4
3822	F4
3823	F3
3824	F3
3825	E3
3826	E3
3827	D4
3828	D2
3829	G3
3830	G3
3831	C2
3832	C3
3833	E4
3834	F4
3835	G2
3836	H2
3837	D2
3838	G2
3839	E3
3840	E3
3841	G2
3842	D2
3843	G3
3844	E1
3845	D2
3846	G3
3847	H2
3848	D3
3849	H2
3850	F1
3853	E4
3854	B5
3855	B5
3856	E4
3857	E4
3858	B5
3859	B5
3860	B4
3861	C4
3862	C4
3863	D2
3864	B4
3866	F3
3867	C4
3868	B3
3869	F4
3870	F4
3871	A2
3872	B3
3873	C3
3874	B3
3875	C2
3876	C2
3877	A2
3878	A5
3879	A2
3880	A2
3881	A3
3882	H4
3883	H4
3884	H4
3885	H4
3886	B2
3887	A2
3888	A3
3889	C2
3890	A3
3891	A2
3892	C2
3893	A2
3894	E4
3895	E3
3897	F2
3898	A2
3899	D5
4800	A5
4801	A4
4802	A4
4803	B2
4804	A5
4805	A5
4806	A5
4807	A5
4808	A5
4809	B5
4810	B4
4811	E3
4812	F2
4813	A4
4814	A4
4815	A4
4816	A4
4817	A3
4818	A3
4819	A3
4820	C4
4821	B2
4822	C5
4823	C5
4824	C5
4825	B3
4826	C3
4827	A4
4828	C2
4829	B2
4831	A2
4832	D2
4834	E4
4835	F3
4836	F4
4838	E3
4843	F3
4845	G4
4846	F4
4847	F4
4849	A4
4856	A2
4857	A1
4858	B1
4859	D1
4860	B2
4861	D1
4862	G2
4863	G4
4864	F3
4865	E3
4867	G2
4868	E2
4869	E2
4870	B1
4876	C5
4879	E3
4884	E2
4885	E2
4886	E2
4887	E2
4890	F2
4893	G1
4894	G1
4896	H2
4897	F3
6871	B1
6872	H2
6873	H2
6874	B1
6875	A1
6876	C5
6877	C4
6878	H2
6879	C2
7801	F3
7805	B4
7812	B1
7850	B5
7851	B5
7860	B5
7861	B5
7873	A1
7874	C2
7875	D4
7876	C2
7877	D3

Component side

1800	F1
1801	C5
1805	A2
1810	C2
1875	H1
1878	B3
1880	B5
1881	G1
2814	G3
2819	G3
2820	G5
2826	E3
2828	D4
2837	E5
2838	F3
2849	E2
2851	C2
2858	B2
2860	C1
2861	C1
2873	B4
2876	B2
2881	A5
2884	F3
2885	E2
2888	G3
3815	G3
3817	H4
3851	F5
3852	F5
3865	H2
3896	H3
5802	B4
7806	H3
7807	G4
7808	E4
7821	G2
7822	A3

3CDC-LC-MB Componentside view

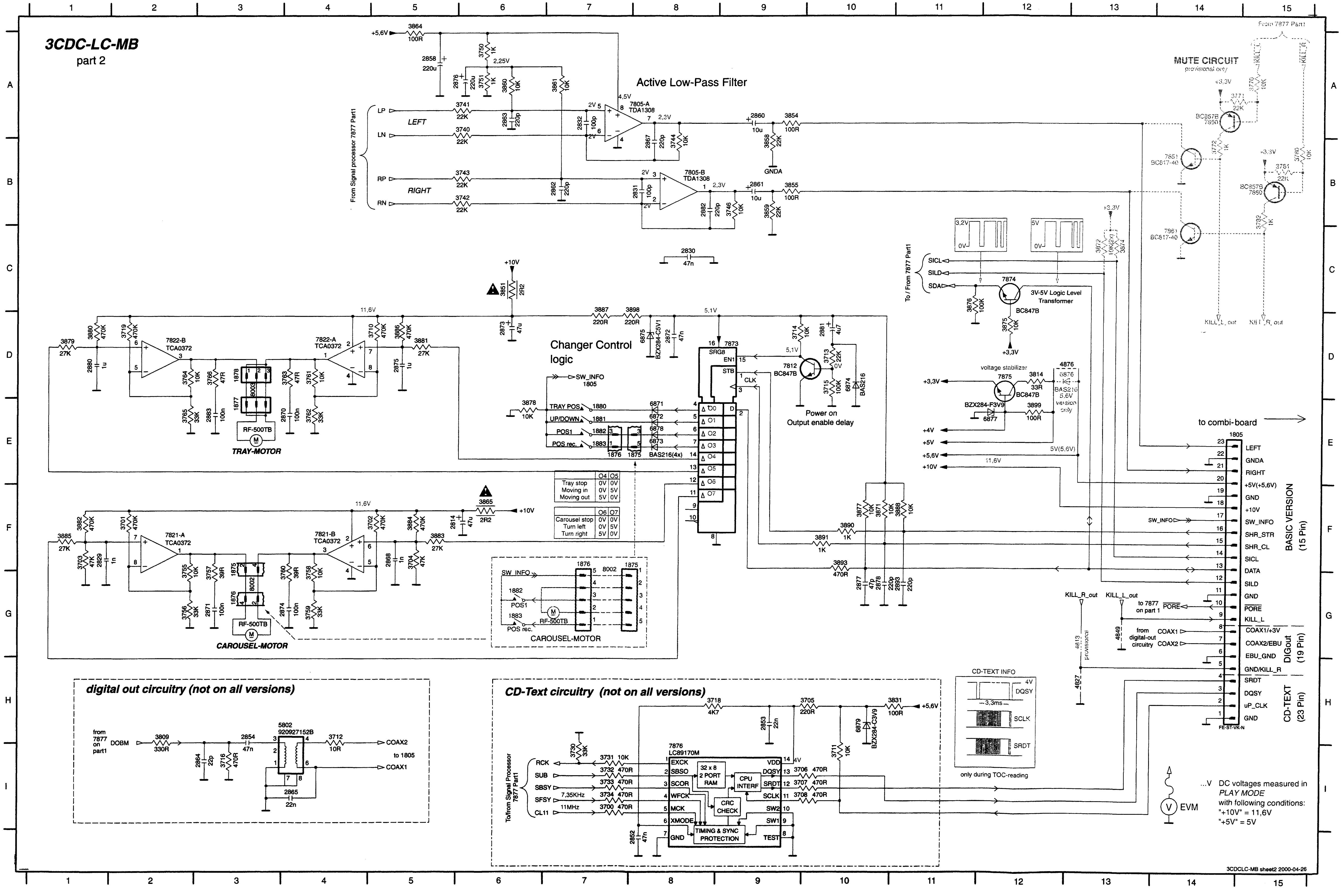


This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

1805	E14	1880	E7	2831	B8	2861	B9	2870	E4	2877	G10	3372	C13	3705	H10
1850	G3	1881	E7	2832	A7	2862	B7	2871	G3	2878	G10	3374	C13	3706	I10
1875	E8	1882	E7	2852	I8	2863	A6	2872	D8	2880	D1	3700	I7	3707	I10
1876	E7	1883	E7	2853	H9	2864	I3	2873	D6	2881	D10	3701	F2	3708	I10
1877	E3	2814	F6	2854	H3	2865	I4	2874	G4	2882	B8	3702	F5	3710	D5
1878	D3	2829	F2	2858	A5	2867	B8	2875	D5	2883	E3	3703	F1	3711	I10
1878	G3	2830	C8	2860	A9	2868	F5	2876	A6	2893	G11	3704	F5	3712	H4

3713	D10	3730	I7	3743	B6	3757	G3	3764	D2	3781	B15	3855	B9
3714	D9	3732	I7	3744	B8	3758	G4	3765	E2	3782	B15	3858	B9
3715	D10	3733	I7	3746	B9	3759	G4	3766	D3	3809	H2	3859	B9
3716	I3	3734	I7	3750	A6	3760	G4	3770	A15	3814	D12	3860	A6
3718	H8	3740	A6	3751	A6	3761	D4	3771	A14	3831	H11	3861	A7
3719	D2	3741	A6	3755	G2	3762	E4	3772	B14	3851	C6	3864	A5
3730	I7	3742	B6	3756	G2	3763	D4	3780	B15	3854	A9	3865	F6

3871	F10	3881	D5	3888	F11	4827	H13	6874	D10	7805-B	B8	7851	B14
3875	D12	3882	F1	3890	F10	4849	G13	6875	D8	7812	D9	7860	B15
3876	C11	3883	F5	3891	F10	4876	D12	6876	D12	7821-A	F2	7861	C14
3877	F10	3884	F5	3893	F10	5802	H4	6877	E12	7821-B	F4	7873	D9
3878	E6	3885	F1	3898	D7	6871	E8	6878	E8	7822-A	D4	7874	C12
3879	D1	3886	D5	3899	E12	6872	E8	6879	H10	7822-B	D2	7875	D12
3880	D1	3887	D7	4813	G13	6873	E8	7805-A	A7	7850	A14	7876	I8


3CDC-LC-MB
part 2
Active Low-Pass Filter
7805-A TDA1308
7805-B TDA1308
LEFT
RIGHT
LP
LN
RP
RN
From Signal processor 7877 Part1
GNDA
MUTE CIRCUIT
professional only
From 7877 Part1
BC857B 7850
BC817-40 7851
BC857B 7860
BC817-40 7861
KILL_L_out
KILL_R_out
To / From 7877 Part1
SICL
SILD
SDA
7874
3V-5V Logic Level Transformer
BC847B
voltage stabilizer
7875
BZX284-F3V9
4876
BAS216 5,6V version only
+3,3V
+4V
+5V
+5,6V
+10V
5V(5,6V)
11,6V
Changer Control logic
7873 SRG8
EN1
STB
CLK
7812 BC847B
Power on Output enable delay
SW_INFO 1805
TRAY POS 1880
UP/DOWN 1881
POS1 1882
POS rec. 1883
BAS216(4x)
7822-A TCA0372
7822-B TCA0372
RF-500TB
TRAY-MOTOR
7821-A TCA0372
7821-B TCA0372
CAROUSEL-MOTOR
8002
O4 O5
Tray stop 0V 0V
Moving in 0V 5V
Moving out 5V 0V
O6 O7
Carousel stop 0V 0V
Turn left 0V 5V
Turn right 5V 0V
to combi-board
LEFT
GNDA
RIGHT
+5V(+5,6V)
GND
+10V
SW_INFO
SHR_STR
SHR_CL
SICL
DATA
SILD
GND
PORE
KILL_L
COAX1/+3V
COAX2/EBU
EBU_GND
GND/KILL_R
SRDT
DQSY
uP_CLK
GND
FE-ST-VK-N
BASIC VERSION (15 Pin)
DIGout (19 Pin)
CD-TEXT (23 Pin)
to 7877 on part 1
from digital-out circuitry
digital out circuitry (not on all versions)
from 7877 on part1
DOBM
5802 920927152B
COAX2
to 1805
COAX1
CD-Text circuitry (not on all versions)
To/from Signal Processor 7877 Part1
RCK
SUB
SBSY
SFSY
CL11
7,35KHz
11MHz
7876 LC89170M
EXCK
SBSO
SCOR
WFCK
MCK
XMODE
GND
VDD
DQSY
SRDT
SCLK
SW2
SW1
TEST
32 x 8 2 PORT RAM
CPU INTERF
CRC CHECK
TIMING & SYNC PROTECTION
CD-TEXT INFO
only during TOC-reading
...V DC voltages measured in PLAY MODE with following conditions:
"+10V" = 11,6V
"+5V" = 5V
EVM
3CDCLC-MB sheet2 2000-04-26

ELECTRICAL PARTS LIST 3CDC-LC-MB MODULE

MISCELLANEOUS

1800	4822 265 10925	FFC-CONNECTOR, 15P, SIDE ENTRY
1805	4822 265 10979	FLEX FOIL CONNECTOR 15PIN
1805	4822 265 11182	FLEX FOIL CONNECTOR 23PIN
1805	4822 265 11545	FLEX FOIL CONNECTOR 19PIN
1875	4822 267 10958	FFC-CONNECTOR, 5P, SIDE ENTRY
1876	2422 025 08332	FLEX FOIL CONNECTOR 5PIN
1880	4822 276 13503	SWITCH, Tray in endposition
1881	4822 276 13503	SWITCH, Drive up/down
1882	4822 276 13503	SWITCH, Position 1
1883	4822 276 13503	SWITCH, Position recogniced
8002	3103 308 91990	FLEX FOIL CABLE 5P, 200mm
8005	3103 308 91980	FLEX FOIL CABLE 15P, 170mm

CAPACITORS

2800	©	4822 126 10326	180pF	5%	
2801	©	4822 122 33575	220pF	5%	50V
2802	©	4822 126 10326	180pF	5%	
2803	©	4822 122 33575	220pF	5%	50V
2804	©	4822 126 13751	47nF	10%	50V
2805	©	4822 122 33575	220pF	5%	50V
2806	©	4822 122 33575	220pF	5%	50V
2807	©	5322 122 31863	330pF	5%	50V
2808	©	4822 122 33575	220pF	5%	50V
2809	©	4822 122 33575	220pF	5%	50V
2810	©	4822 126 10326	180pF	5%	
2811	©	4822 122 33575	220pF	5%	50V
2812	©	4822 126 14585	100nF	10%	50V
2813	©	4822 126 14585	100nF	10%	50V
2814		4822 124 40433	47µF	20%	25V
2815	©	4822 126 14076	220nF	20%	25V
2816	©	4822 126 13344	1,5nF	5%	63V
2817	©	4822 126 14585	100nF	10%	50V
2818	©	4822 126 13344	1,5nF	5%	63V
2819		4822 124 40433	47µF	20%	25V
2820		4822 124 40433	47µF	20%	25V
2821	©	4822 126 14585	100nF	10%	50V
2822	©	2222 861 15222	2,2nF	10%	50V
2823	©	4822 126 13693	56pF	1%	63V
2824	©	4822 126 13751	47nF	10%	50V
2825	©	4822 122 33177	10nF	20%	50V
2826		4822 124 12362	47µF	20%	4V
2828		4822 124 12362	47µF	20%	4V
2829	©	5322 122 31647	1nF	10%	63V
2830	©	4822 126 13751	47nF	10%	50V
2831	©	5322 122 32531	100pF	5%	50V
2832	©	5322 122 32531	100pF	5%	50V
2833	©	5322 122 32659	33pF	5%	50V
2834	©	5322 122 32659	33pF	5%	50V
2835	©	4822 126 13751	47nF	10%	50V
2836	©	4822 126 14585	100nF	10%	50V
2837		4822 124 40433	47µF	20%	25V
2838		4822 124 40248	10µF	20%	63V
2839	©	4822 126 14585	100nF	10%	50V
2840	©	4822 126 14585	100nF	10%	50V
2841	©	5322 122 31647	1nF	10%	63V
2842	©	5322 126 10794	220pF	10%	
2843	©	4822 126 14585	100nF	10%	50V
2844	©	5322 122 34099	470pF	10%	63V
2845	©	4822 126 14585	100nF	10%	50V
2846	©	4822 122 33575	220pF	5%	50V
2847	©	4822 126 14585	100nF	10%	50V
2848	©	5322 122 33538	150pF	5%	63V
2849		4822 124 40769	4,7µF	20%	100V
2850	©	5322 122 31647	1nF	10%	63V
2851		4822 124 42383	220µF	20%	4V
2852	©	4822 126 13751	47nF	10%	50V
2853	©	5322 122 32654	22nF	10%	63V
2854	©	4822 126 13751	47nF	10%	50V
2855	©	5322 122 34099	470pF	10%	63V
2856	©	4822 126 13691	27pF	1%	63V
2857	©	4822 122 33575	220pF	5%	50V
2858		4822 124 12245	220µF	20%	16V
2859	©	4822 122 33575	220pF	5%	50V
2860		4822 124 11947	10µF	20%	16V
2861		4822 124 11947	10µF	20%	16V
2862	©	4822 122 33575	220pF	5%	50V
2863	©	4822 122 33575	220pF	5%	50V
2864	©	5322 122 32658	22pF	5%	50V
2865	©	5322 122 32654	22nF	10%	63V
2866	©	5322 122 33538	150pF	5%	63V
2867	©	4822 122 33575	220pF	5%	50V
2868	©	5322 122 31647	1nF	10%	63V
2869	©	4822 126 13751	47nF	10%	50V
2870	©	4822 126 14585	100nF	10%	50V
2871	©	4822 126 14585	100nF	10%	50V
2872	©	4822 126 13751	47nF	10%	50V
2873		4822 124 40433	47µF	20%	25V
2874	©	4822 126 14585	100nF	10%	50V
2875	©	4822 126 14043	1µF	20%	16V
2876		4822 124 12245	220µF	20%	16V
2877	©	4822 126 13692	47pF	1%	63V
2878	©	4822 122 33575	220pF	5%	50V
2879	©	4822 126 14585	100nF	10%	50V
2880	©	4822 126 14043	1µF	20%	16V
2881		4822 124 40769	4,7µF	20%	100V
2882	©	4822 122 33575	220pF	5%	50V
2883	©	4822 126 14585	100nF	10%	50V
2884		4822 124 40769	4,7µF	20%	100V
2885		4822 124 40769	4,7µF	20%	100V
2887	©	4822 126 14585	100nF	10%	50V
2888		4822 124 40769	4,7µF	20%	100V
2891	©	4822 122 33575	220pF	5%	50V
2892	©	5322 126 10223	4,7nF	10%	63V
2893	©	4822 122 33575	220pF	5%	50V

RESISTORS

3700	©	4822 051 20471	470Ω	5%	0,1W
3701	©	4822 051 20474	470kΩ	5%	0,1W
3702	©	4822 051 20474	470kΩ	5%	0,1W
3703	©	4822 117 10834	47kΩ	1%	0,1W
3704	©	4822 117 10834	47kΩ	1%	0,1W
3705	©	4822 117 11503	220Ω	5%	0,1W
3706	©	4822 051 20471	470Ω	5%	0,1W
3707	©	4822 051 20471	470Ω	5%	0,1W
3708	©	4822 051 20471	470Ω	5%	0,1W
3709	©	4822 051 20108	1Ω	5%	0,1W
3710	©	4822 051 20474	470kΩ	5%	0,1W
3711	©	4822 117 10833	10kΩ	1%	0,1W
3712	©	4822 051 20109	10Ω	5%	0,1W
3713	©	4822 051 20223	22kΩ	5%	0,1W
3714	©	4822 117 10833	10kΩ	1%	0,1W
3715	©	4822 117 10837	100kΩ	1%	0,1W
3716	©	4822 051 20471	470Ω	5%	0,1W
3718	©	4822 051 20472	4,7kΩ	5%	0,1W
3719	©	4822 051 20474	470kΩ	5%	0,1W
3727	©	4822 051 20472	4,7kΩ	5%	0,1W
3728	©	4822 051 20472	4,7kΩ	5%	0,1W
3730	©	4822 051 20333	33kΩ	5%	0,1W
3731	©	4822 117 10833	10kΩ	1%	0,1W
3732	©	4822 051 20471	470Ω	5%	0,1W
3733	©	4822 051 20471	470Ω	5%	0,1W

ELECTRICAL PARTS LIST 3CDC-LC-MB MODULE

RESISTORS

3734	©	4822 051 20471	470Ω	5%	0,1W
3740	©	4822 051 20223	22kΩ	5%	0,1W
3741	©	4822 051 20223	22kΩ	5%	0,1W
3742	©	4822 051 20223	22kΩ	5%	0,1W
3743	©	4822 051 20223	22kΩ	5%	0,1W
3744	©	4822 117 10833	10kΩ	1%	0,1W
3746	©	4822 117 10833	10kΩ	1%	0,1W
3750	©	4822 051 10102	1kΩ	2%	0,25W
3751	©	4822 051 10102	1kΩ	2%	0,25W
3752	©	4822 051 20399	39Ω	5%	0,1W
3753	©	4822 117 10834	47kΩ	1%	0,1W
3754	©	4822 117 12024	27kΩ	1%	0,1W
3755	©	4822 117 10833	10kΩ	1%	0,1W
3756	©	2120 108 92632	33kΩ	1%	0,1W
3757	©	4822 051 20399	39Ω	5%	0,1W
3758	©	4822 117 10833	10kΩ	1%	0,1W
3759	©	2120 108 92632	33kΩ	1%	0,1W
3760	©	4822 051 20399	39Ω	5%	0,1W
3761	©	4822 117 10833	10kΩ	1%	0,1W
3762	©	2120 108 92632	33kΩ	1%	0,1W
3763	©	4822 051 20479	47Ω	5%	0,1W
3764	©	4822 117 10833	10kΩ	1%	0,1W
3765	©	2120 108 92632	33kΩ	1%	0,1W
3766	©	4822 051 20479	47Ω	5%	0,1W
3773	©	4822 117 12024	27kΩ	1%	0,1W
3775	©	4822 117 12024	27kΩ	1%	0,1W
3800	©	4822 117 11148	56kΩ	1%	0,1W
3801	©	4822 117 10833	10kΩ	1%	0,1W
3802	©	4822 117 11148	56kΩ	1%	0,1W
3803	©	4822 117 10833	10kΩ	1%	0,1W
3804	©	4822 117 10833	10kΩ	1%	0,1W
3805	©	4822 117 10833	10kΩ	1%	0,1W
3806	©	4822 117 10833	10kΩ	1%	0,1W
3807	©	4822 117 10833	10kΩ	1%	0,1W
3808	©	4822 117 10833	10kΩ	1%	0,1W
3809	©	4822 117 13577	330Ω	1%	0,1W
3810	©	4822 051 20399	39Ω	5%	0,1W
3811	©	4822 051 20273	27kΩ	5%	0,1W
3812	©	4822 117 10834	47kΩ	1%	0,1W
3813	©	4822 051 20399	39Ω	5%	0,1W
3814	©	4822 051 20339	33Ω	5%	0,1W
3815		4822 052 10478	4,7Ω	5%	NFR
3816	©	4822 117 10834	47kΩ	1%	0,1W
3817		4822 052 10228	2,2Ω	5%	0,33W
3818	©	4822 051 20399	39Ω	5%	0,1W
3819	©	4822 051 20471	470Ω	5%	0,1W
3820	©	4822 051 20472	4,7kΩ	5%	0,1W
3821	©	4822 051 20472	4,7kΩ	5%	0,1W
3822	©	4822 117 12955	2,7kΩ	1%	0,1W
3823	©	4822 051 10102	1kΩ	2%	0,25W
3824	©	4822 051 10102	1kΩ	2%	0,25W
3825	©	4822 051 10102	1kΩ	2%	0,25W
3826	©	4822 051 20223	22kΩ	5%	0,1W
3827	©	4822 051 20273	27kΩ	5%	0,1W
3828	©	4822 051 20223	22kΩ	5%	0,1W
3829	©	4822 117 10834	47kΩ	1%	0,1W
3830	©	4822 117 12024	27kΩ	1%	0,1W
3831	©	4822 051 20101	100Ω	5%	0,1W
3832	©	4822 117 10833	10kΩ	1%	0,1W
3833	©	4822 051 20223	22kΩ	5%	0,1W
3834	©	4822 051 20223	22kΩ	5%	0,1W
3835	©	4822 117 10834	47kΩ	1%	0,1W
3836	©	4822 117 12024	27kΩ	1%	0,1W
3837	©	4822 051 10102	1kΩ	2%	0,25W
3838	©	4822 051 10102	1kΩ	2%	0,25W
3839	©	4822 051 20273	27kΩ	5%	0,1W
3840	©	4822 051 20273	27kΩ	5%	0,1W
3841	©	4822 117 10834	47kΩ	1%	0,1W
3842	©	4822 117 10833	10kΩ	1%	0,1W
3843	©	4822 117 12955	2,7kΩ	1%	0,1W
3844	©	4822 117 12024	27kΩ	1%	0,1W
3845	©	4822 117 10833	10kΩ	1%	0,1W
3846	©	4822 117 12955	2,7kΩ	1%	0,1W
3847	©	4822 051 20399	39Ω	5%	0,1W
3848	©	4822 117 10965	18kΩ	2%	0,1W
3849	©	4822 117 10965	18kΩ	2%	0,1W
3850	©	4822 051 20399	39Ω	5%	0,1W
3851		4822 052 10228	2,2Ω	5%	0,33W
3852		4822 052 10228	2,2Ω	5%	0,33W
3853	©	4822 051 20471	470Ω	5%	0,1W
3854	©	4822 051 20101	100Ω	5%	0,1W
3855	©	4822 051 20101	100Ω	5%	0,1W
3856	©	4822 117 12521	68Ω	1%	0,1W
3857	©	4822 117 12521	68Ω	1%	0,1W
3858	©	4822 051 20223	22kΩ	5%	0,1W
3859	©	4822 051 20223	22kΩ	5%	0,1W
3860	©	4822 117 10833	10kΩ	1%	0,1W
3861	©	4822 117 10833	10kΩ	1%	0,1W
3862	©	4822 051 20121	120Ω	5%	0,1W
3863	©	4822 051 20101	100Ω	5%	0,1W
3863	©	4822 051 20339	33Ω	5%	0,1W
3864	©	4822 051 20101	100Ω	5%	0,1W
3865		4822 052 10228	2,2Ω	5%	0,33W
3866	©	4822 117 10833	10kΩ	1%	0,1W
3867	©	4822 051 20121	120Ω	5%	0,1W
3869	©	4822 051 20478	4,7Ω	5%	0,1W
3870	©	4822 051 20101	100Ω	5%	0,1W
3871	©	4822 117 10833	10kΩ	1%	0,1W
3873	©	4822 051 20471	470Ω	5%	0,1W
3875	©	4822 117 10833	10kΩ	1%	0,1W
3876	©	4822 117 10837	100kΩ	1%	0,1W
3877	©	4822 117 10833	10kΩ	1%	0,1W
3878	©	4822 117 10833	10kΩ	1%	0,1W
3879	©	4822 051 20273	27kΩ	5%	0,1W
3880	©	4822 051 20474	470kΩ	5%	0,1W
3881	©	4822 051 20273	27kΩ	5%	0,1W
3882	©	4822 051 20474	470kΩ	5%	0,1W
3883	©	4822 051 20273	27kΩ	5%	0,1W
3884	©	4822 051 20474	470kΩ	5%	0,1W
3885	©	4822 051 20273	27kΩ	5%	0,1W
3886	©	4822 051 20474	470kΩ	5%	0,1W
3887	©	4822 117 11503	220Ω	5%	0,1W
3888	©	4822 117 10833	10kΩ	1%	0,1W
3889	©	4822 051 20471	470Ω	5%	0,1W
3890	©	4822 051 10102	1kΩ	2%	0,25W
3891	©	4822 051 10102	1kΩ	2%	0,25W
3892	©	4822 051 20471	470Ω	5%	0,1W
3893	©	4822 051 20471	470Ω	5%	0,1W
3894	©	4822 051 20101	100Ω	5%	0,1W
3895	©	4822 051 20159	15Ω	5%	0,1W
3896		4822 052 10228	2,2Ω	5%	0,33W
3897	©	4822 051 20101	100Ω	5%	0,1W
3898	©	4822 117 11503	220Ω	5%	0,1W
3899	©	4822 051 20101	100Ω	5%	0,1W
4800	©	4822 051 20008	CHIP JUMPER 0805		
4801	©	4822 051 20008	CHIP JUMPER 0805		
4802	©	4822 051 20008	CHIP JUMPER 0805		
4804	©	4822 051 20008	CHIP JUMPER 0805		
4805	©	4822 051 20008	CHIP JUMPER 0805		
4806	©	4822 051 20008	CHIP JUMPER 0805		

ELECTRICAL PARTS LIST 3CDC-LC-MB MODULE

RESISTORS

4807	©	4822 051 20008	CHIP JUMPER 0805
4808	©	4822 051 20008	CHIP JUMPER 0805
4809	©	4822 051 20008	CHIP JUMPER 0805
4810	©	4822 051 20008	CHIP JUMPER 0805
4812	©	4822 051 20008	CHIP JUMPER 0805
4814	©	4822 051 20008	CHIP JUMPER 0805
4815	©	4822 051 20008	CHIP JUMPER 0805
4816	©	4822 051 20008	CHIP JUMPER 0805
4817	©	4822 051 20008	CHIP JUMPER 0805
4818	©	4822 051 20008	CHIP JUMPER 0805
4819	©	4822 051 20008	CHIP JUMPER 0805
4820	©	4822 051 20008	CHIP JUMPER 0805
4821	©	4822 051 20008	CHIP JUMPER 0805
4822	©	4822 051 20008	CHIP JUMPER 0805
4823	©	4822 051 20008	CHIP JUMPER 0805
4824	©	4822 051 20008	CHIP JUMPER 0805
4825	©	4822 051 20008	CHIP JUMPER 0805
4826	©	4822 051 20008	CHIP JUMPER 0805
4827	©	4822 051 20008	CHIP JUMPER 0805
4828	©	4822 051 20008	CHIP JUMPER 0805
4831	©	4822 051 20008	CHIP JUMPER 0805
4832	©	4822 051 20008	CHIP JUMPER 0805
4834	©	4822 051 20008	CHIP JUMPER 0805
4835	©	4822 051 20008	CHIP JUMPER 0805
4836	©	4822 051 20008	CHIP JUMPER 0805
4838	©	4822 051 20008	CHIP JUMPER 0805
4843	©	4822 051 20008	CHIP JUMPER 0805
4845	©	4822 051 20008	CHIP JUMPER 0805
4846	©	4822 051 20008	CHIP JUMPER 0805
4847	©	4822 051 20008	CHIP JUMPER 0805
4849	©	4822 051 20008	CHIP JUMPER 0805
4856	©	4822 051 20008	CHIP JUMPER 0805
4857	©	4822 051 20008	CHIP JUMPER 0805
4858	©	4822 051 20008	CHIP JUMPER 0805
4859	©	4822 051 20008	CHIP JUMPER 0805
4860	©	4822 051 20008	CHIP JUMPER 0805
4861	©	4822 051 20008	CHIP JUMPER 0805
4862	©	4822 051 20008	CHIP JUMPER 0805
4863	©	4822 051 20008	CHIP JUMPER 0805
4864	©	4822 051 20008	CHIP JUMPER 0805
4865	©	4822 051 20008	CHIP JUMPER 0805
4867	©	4822 051 20008	CHIP JUMPER 0805
4868	©	4822 051 20008	CHIP JUMPER 0805
4869	©	4822 051 20008	CHIP JUMPER 0805
4870	©	4822 051 20008	CHIP JUMPER 0805
4876	©	4822 051 20008	CHIP JUMPER 0805
4879	©	4822 051 20008	CHIP JUMPER 0805
4884	©	4822 051 20008	CHIP JUMPER 0805
4885	©	4822 051 20008	CHIP JUMPER 0805
4886	©	4822 051 20008	CHIP JUMPER 0805
4887	©	4822 051 20008	CHIP JUMPER 0805
4890	©	4822 051 20008	CHIP JUMPER 0805
4893	©	4822 051 20008	CHIP JUMPER 0805
4894	©	4822 051 20008	CHIP JUMPER 0805
4896	©	4822 051 20008	CHIP JUMPER 0805
4897	©	4822 051 20008	CHIP JUMPER 0805

COILS

1810	2422 543 01068	RESONATOR 8MHZ
1810	4822 242 73557	CERAMIC RES. 8,46MHz
5802	4822 156 31058	FILTER DIGITAL OUT

DIODES

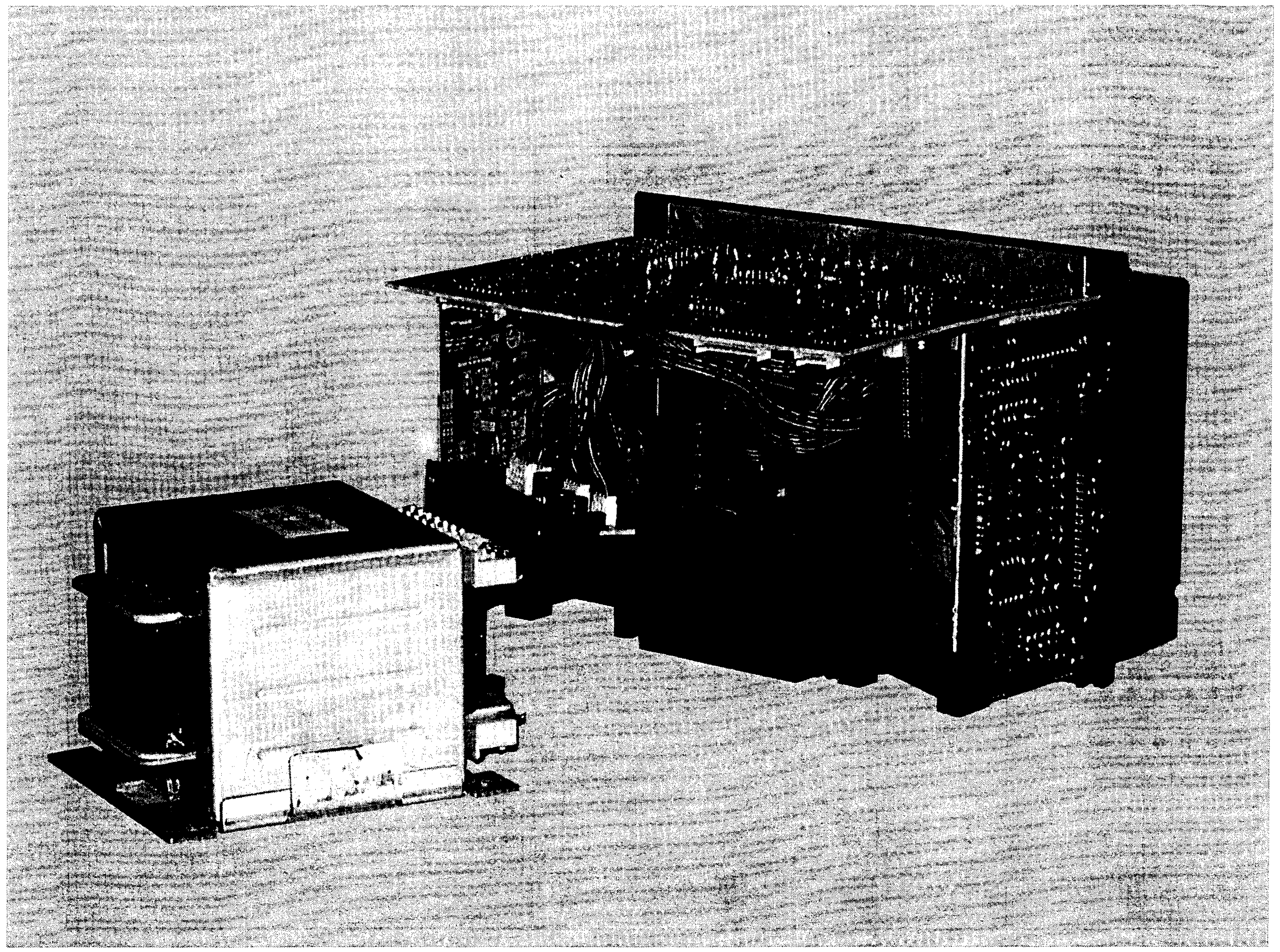
6871	©	4822 130 11397	BAS316
6872	©	4822 130 11397	BAS316
6873	©	4822 130 11397	BAS316
6874	©	4822 130 11397	BAS316
6875	©	9340 548 52115	BZX284-C5V1
6877	©	9322 129 34685	BZX284-C3V9
6878	©	4822 130 11397	BAS316
6879	©	9322 129 34685	BZX284-C3V9

TRANSISTORS

7812	©	5322 130 60159	BC846B
7874	©	5322 130 60159	BC846B
7875	©	5322 130 60159	BC846B

INTEGRATED CIRCUITS

7801	©	9352 622 36118	TZA1025T/V2, HF-Amplifier
7805	©	4822 209 33165	TDA1308T/N1, OPAMP
7806		4822 209 62059	TCA0372DP1, Motor driver
7807		4822 209 62059	TCA0372DP1, Motor driver
7808		4822 209 62059	TCA0372DP1, Motor driver
7821		4822 209 62059	TCA0372DP1, Motor driver
7822		4822 209 62059	TCA0372DP1, Motor driver
7873		5322 209 11306	HEF4094BT, Shift register
7876		4822 209 16143	LC89170M, CD TEXT IC
7877	©	9352 642 17557	SAA7325H/M2B Signal processor CD10



POWER 5-VA Module

(70 / 100W Version)

Stage .6

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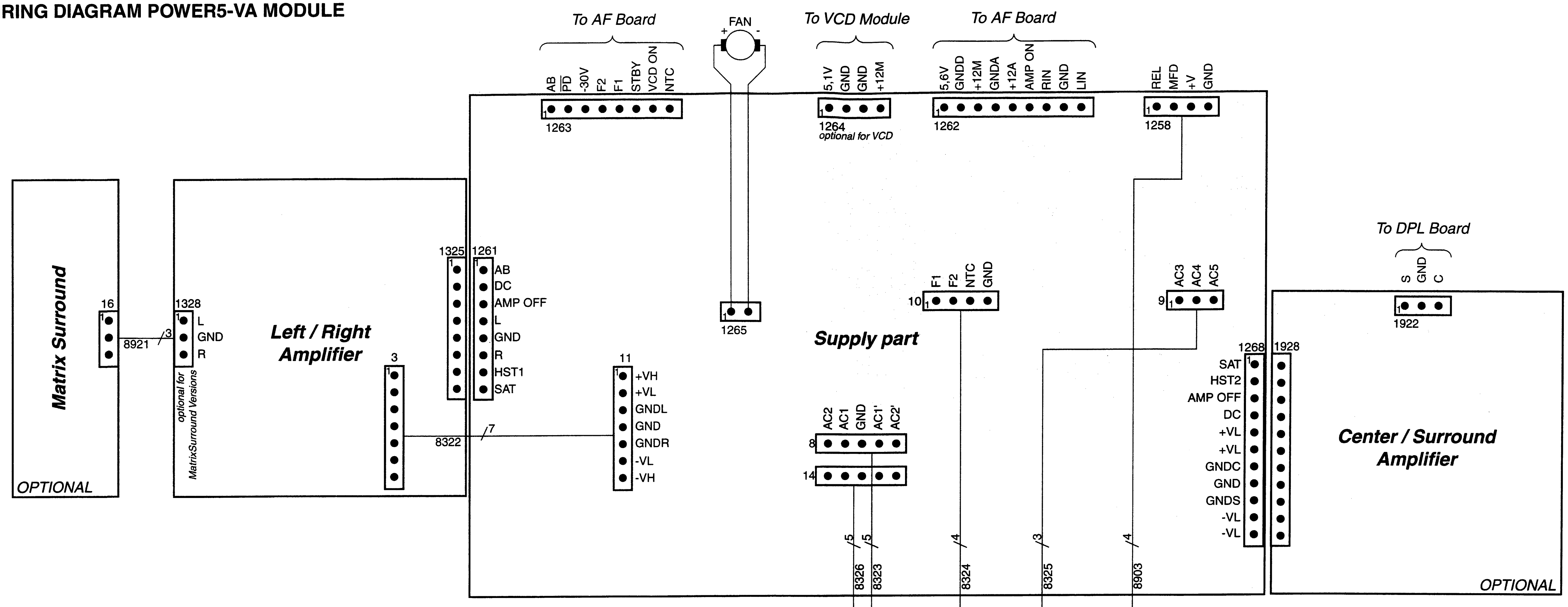
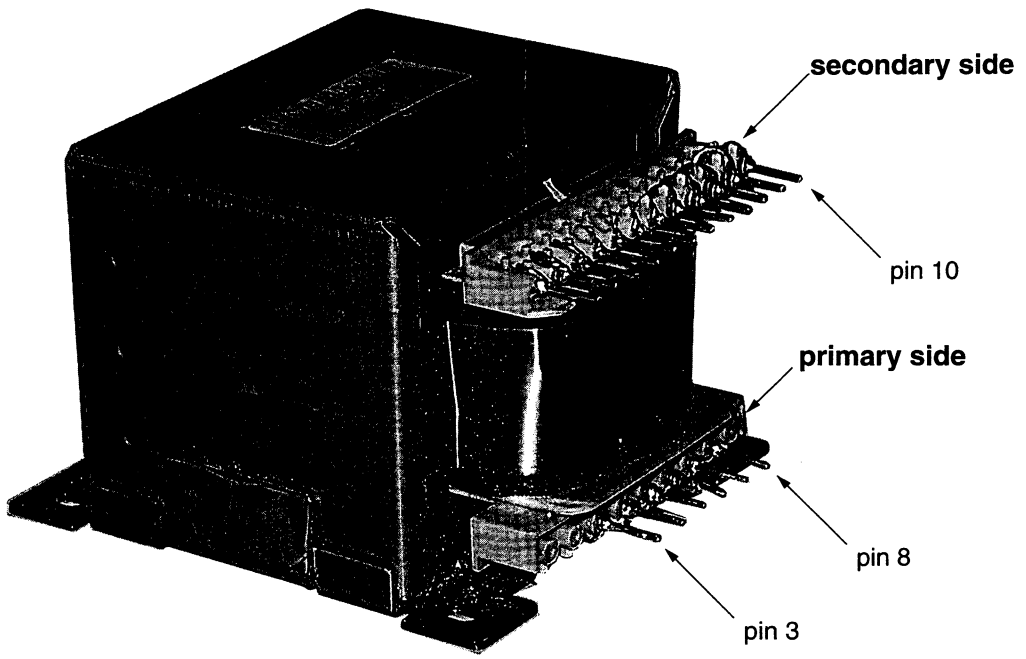
Exploded view 11-10
Partslist 11-11ff

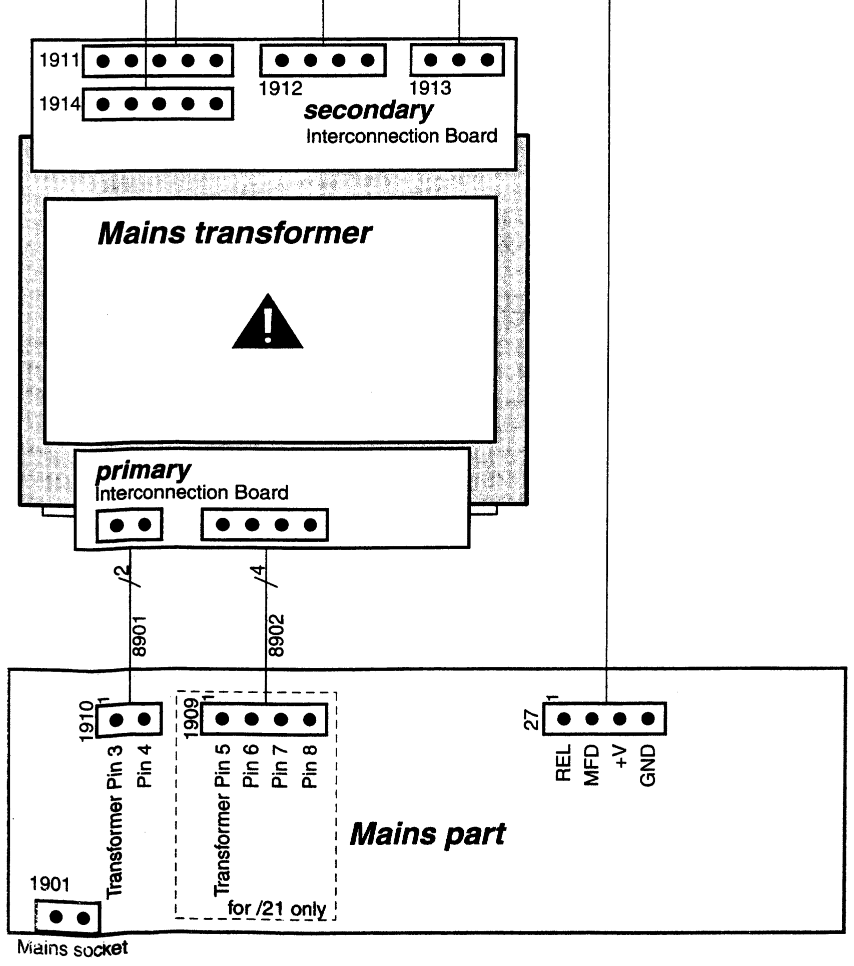
Technical remarks

WIRING DIAGRAM POWER5-VA MODULE


To AF Board
AB
PD
-30V
F2
F1
STBY
VCD ON
NTC
1263
FAN
+
-
1265
To VCD Module
5,1V
GND
GND
+12M
1264
optional for VCD
To AF Board
5,6V
GNDD
+12M
GNDA
+12A
AMP ON
RIN
GND
LIN
1262
REL
MFD
+V
GND
1258
Matrix Surround
OPTIONAL
16
8921
/3
1328
L
GND
R
optional for MatrixSurround Versions
Left / Right Amplifier
3
8322
/7
1325
1261
AB
DC
AMP OFF
L
GND
R
HST1
SAT
11
+VH
+VL
GNDL
GND
GNDR
-VL
-VH
Supply part
F1
F2
NTC
GND
10
AC3
AC4
AC5
9
AC2
AC1
GND
AC1'
AC2'
8
14
/5
/5
/4
/3
/4
8326
8323
8324
8325
8903
To DPL Board
S
GND
C
1922
1268
1928
SAT
HST2
AMP OFF
DC
+VL
+VL
GNDC
GND
GNDS
-VL
-VL
Center / Surround Amplifier
OPTIONAL

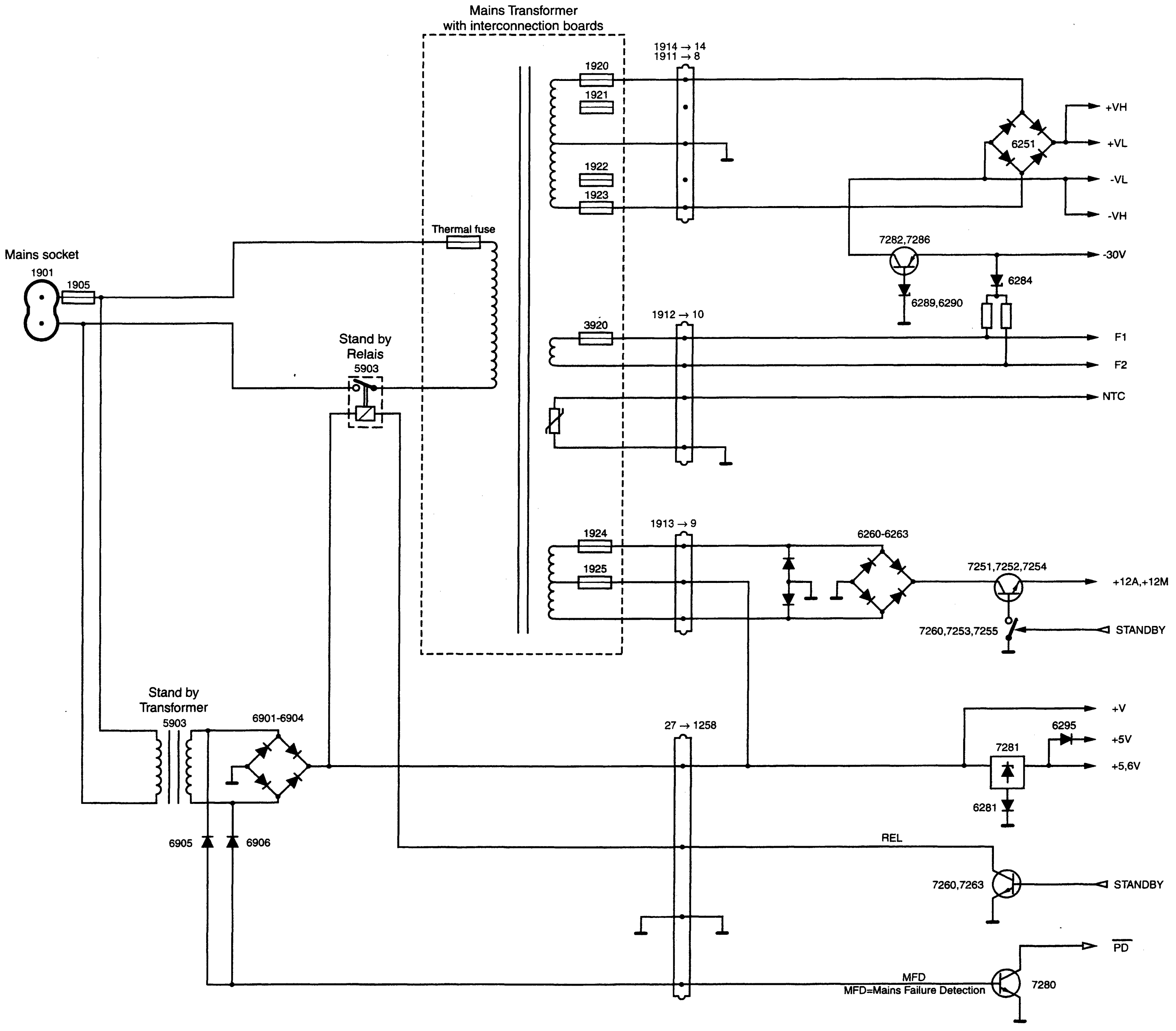
Mains Transformer /21


secondary side
pin 10
primary side
pin 8
pin 3

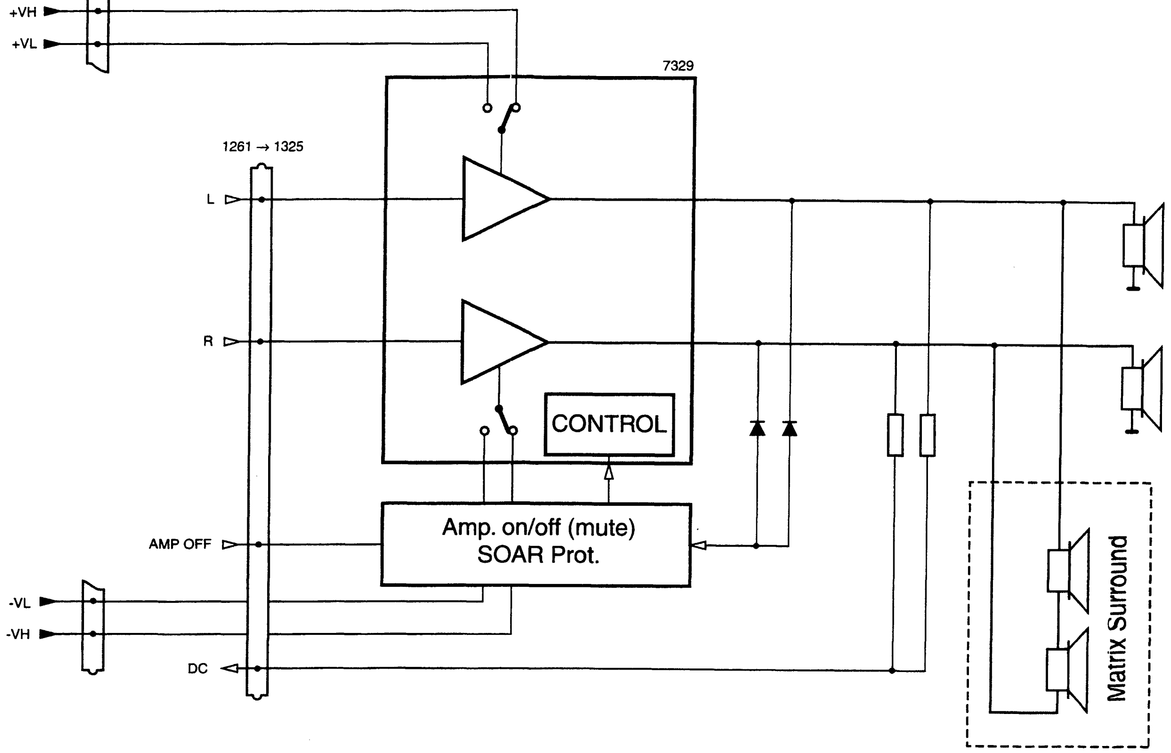

1911
1914
1912
1913
secondary
Interconnection Board
Mains transformer
primary
Interconnection Board
/2
/4
8901
8902
1910
Transformer Pin 3
Pin 4
1909
Transformer Pin 5
Pin 6
Pin 7
Pin 8
for /21 only
27
REL
MFD
+V
GND
Mains part
1901
Mains socket

BLOCK DIAGRAM 70/100W VERSION

SUPPLY PART


Mains Transformer
with interconnection boards
1914 → 14
1911 → 8
1920
1921
1922
1923
6251
+VH
+VL
-VL
-VH
Thermal fuse
Mains socket
1901
1905
7282,7286
-30V
6284
6289,6290
1912 → 10
3920
F1
F2
NTC
Stand by
Relais
5903
1913 → 9
1924
1925
6260-6263
7251,7252,7254
+12A,+12M
STANDBY
7260,7253,7255
Stand by
Transformer
5903
6901-6904
27 → 1258
+V
6295
+5V
7281
+5,6V
6281
6905
6906
REL
7260,7263
STANDBY
$\overline{PD}$
MFD
MFD=Mains Failure Detection
7280

LEFT / RIGHT AMPLIFIER

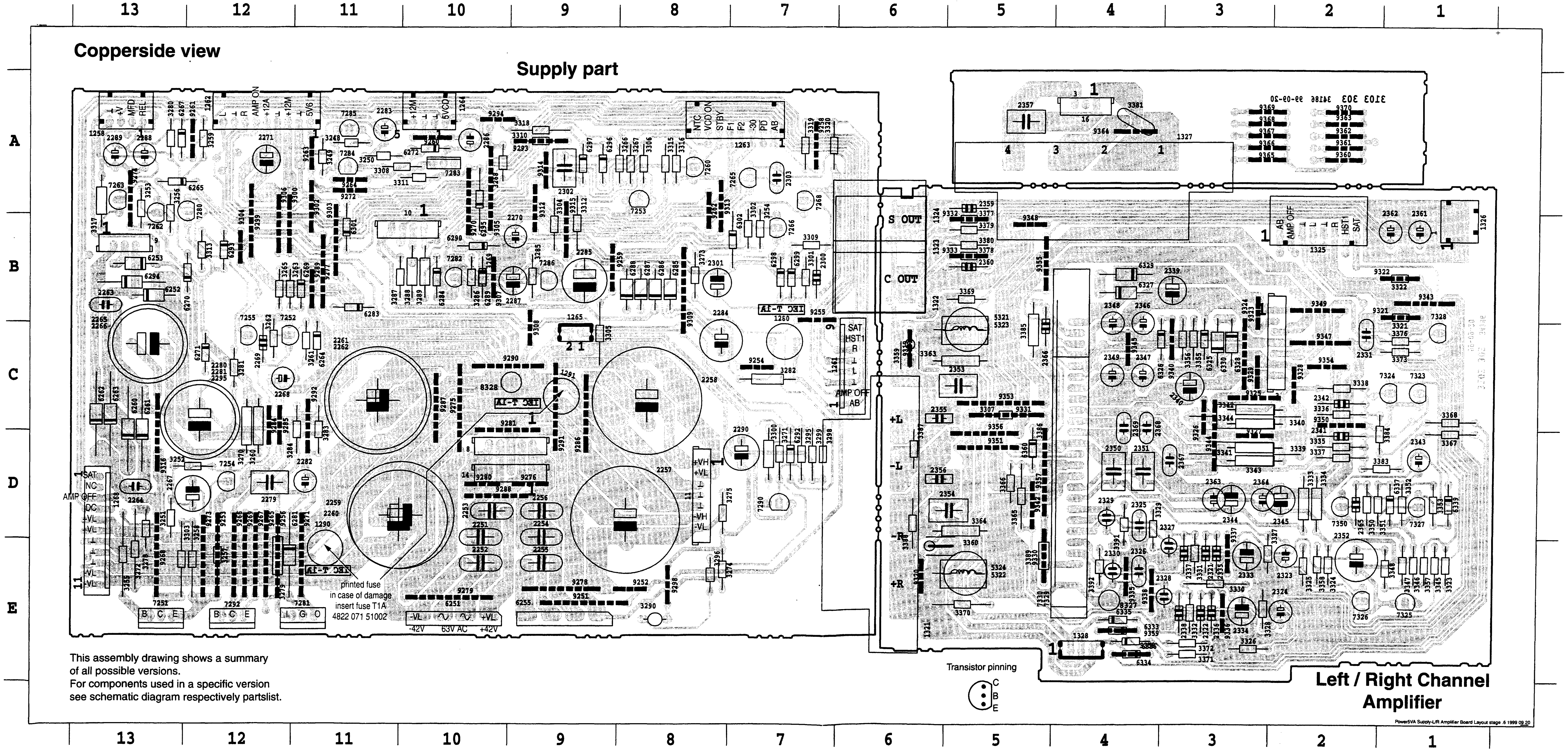

11 → 3
+VH
+VL
7329
1261 → 1325
L
R
CONTROL
AMP OFF
Amp. on/off (mute)
SOAR Prot.
-VL
-VH
DC
Matrix Surround

COMPONENT LAYOUT SUPPLY PART & L/R AMPLIFIER PART

9360	A	2
9361	A	2
9362	A	2
9363	A	2
9364	A	4
9365	A	3
9366	A	3
9367	A	3
9368	A	3
9369	A	3
9370	A	2
9314	A	9
9315	B	9
9316	D	13
T256	C	13
T257	C	12
T258	D	13
T265	B	10
T305	A	11
T312	A	7
T314	A	10
T315	B	9
T316	A	10

16	A	4
1327	A	4
2357	A	5
3381	A	4
9291	C	9
9292	C	11
9293	A	9
9294	A	10
9298	E	8
9299	B	12
9300	B	12
9302	A	11
9303	B	11
9304	B	12
9305	A	10
9306	B	12
9307	B	10
9308	C	9
9309	B	8
9312	A	9
9313	A	8
9272	A	11
9273	E	12
9274	A	13
9275	C	10
9276	D	9
9277	B	11
9278	E	9
9279	E	10
9280	D	10
9281	D	10
9284	C	12
9285	C	12
9286	C	9
9287	C	10
9288	D	10
9289	B	11
9290	C	10
9254	C	7
9255	B	7
9256	E	12
9258	A	7
9259	B	9
9260	A	10
9261	A	12
9262	A	8
9263	A	11
9264	A	11
9265	E	12
9266	E	12
9267	E	12
9268	E	13
9269	E	12
9270	A	10
9271	E	11
7263	A	13
7265	A	7
7266	B	7
7268	A	7
7280	A	12
7281	E	11
7282	B	10
7283	A	10
7284	A	11
7285	A	11
7286	B	9
7290	D	7
7292	E	12
8328	C	9
9251	E	9
9252	E	8
9253	E	12
6292	D	7
6293	B	12
6294	B	13
6295	A	10
6296	A	9
6297	A	9
6298	B	7
6299	B	7
6301	B	11
6302	B	7
7251	E	13
7252	C	12
7253	A	8
7254	D	12
7255	C	12
7260	A	8
7262	B	13
6263	C	13
6264	C	11
6265	A	13
6267	A	13
6269	B	11
6270	B	12
6271	C	12
6272	A	10
6281	E	12
6283	B	11
6284	B	10
6285	B	8
6286	B	8
6287	B	8
6288	B	8
6289	B	10
6290	B	10
3310	A	9
3311	A	10
3312	B	9
3313	B	12
3315	A	8
3316	A	8
3317	A	13
3318	A	9
3319	A	7
3320	A	7
6251	E	10
6252	B	13
6253	B	13
6255	E	9
6260	D	13
6261	D	13
6262	C	13
3287	B	11
3288	B	10
3289	B	10
3290	E	8
3295	D	7
3296	E	8
3298	D	7
3299	D	7
3300	D	7
3301	B	7
3302	B	7
3303	E	13
3304	B	9
3305	C	9
3306	A	8
3308	A	10
3309	B	7
3268	A	10
3269	B	10
3270	C	12
3271	D	7
3272	E	13
3273	B	8
3274	E	8
3275	D	8
3278	D	13
3279	E	12
3280	A	13
3281	C	12
3282	C	7
3283	D	11
3284	D	11
3285	B	9
3286	B	10
3250	A	11
3251	D	13
3252	D	12
3253	A	13
3254	B	7
3255	E	13
3256	B	13
3257	E	12
3258	E	12
3259	A	12
3260	C	12
3261	C	11
3262	C	12
3263	B	12
3265	B	12
3266	A	8
3267	A	8
2281	C	12
2282	D	11
2283	A	11
2284	C	8
2285	B	9
2286	A	10
2287	B	9
2288	A	13
2289	A	13
2290	D	7
2295	C	12
2300	B	7
2301	B	8
2302	A	9
2303	A	7
3248	A	11
3249	A	11
2257	D	8
2258	C	8
2259	D	10
2260	D	11
2261	C	11
2262	C	11
2263	B	13
2264	D	13
2265	C	13
2266	C	13
2267	D	12
2268	C	12
2269	C	12
2270	B	9
2271	A	12
2279	D	12
2280	C	12
14	D	9
1258	A	13
1261	C	6
1262	A	12
1263	A	7
1264	A	10
1265	C	9
1268	D	13
1280	C	7
1290	E	11
1291	C	9
2251	D	10
2252	E	10
2253	D	10
2254	D	9
2255	E	9
2256	D	9
9348	B	5
9349	B	2
9350	C	2
9351	D	5
9353	C	5
9354	C	2
9355	B	5
9356	D	5
9357	D	5
9358	E	4
9359	E	4
T321	A	1

8	D	9
9	B	13
10	B	10
11	D	8
9327	D	3
9328	C	2
9329	C	3
9330	E	5
9331	C	5
9332	B	5
9333	B	5
9335	E	4
9336	E	3
9337	E	3
9338	E	4
9340	C	3
9342	D	5
9343	B	1
9344	D	3
9345	C	4
9347	C	2
7324	C	1
7325	E	1
7326	E	2
7327	D	1
7328	C	1
7329	D	4
7330	C	4
7350	D	2
8327	E	4
9319	C	6
9320	E	6
9321	B	1
9322	B	1
9323	B	3
9324	C	3
9325	C	3
9326	C	3
5322	E	5
5323	C	5
5324	E	5
6325	C	3
6326	C	4
6327	B	4
6328	C	3
6329	B	4
6330	C	3
6333	E	4
6334	E	4
6335	E	4
6336	E	4
6337	D	1
6339	D	1
6360	D	5
7323	C	1
3372	E	3
3373	C	1
3376	C	1
3377	B	5
3378	B	5
3379	B	5
3380	B	5
3383	D	1
3384	D	1
3385	C	5
3386	D	5
3387	D	6
3388	D	6
3389	E	5
3391	D	4
3392	E	4
5321	C	5
3352	D	1
3353	D	1
3355	C	3
3356	C	3
3357	E	1
3358	E	2
3359	C	6
3360	E	6
3363	C	5
3364	D	5
3365	D	5
3366	D	5
3367	D	1
3368	C	1
3369	B	5
3370	E	5
3371	E	3
3334	D	2
3335	D	2
3336	C	2
3337	D	2
3338	C	2
3339	D	2
3340	C	2
3341	D	3
3342	C	3
3343	D	3
3344	C	3
3345	E	1
3346	E	1
3347	E	1
3348	E	1
3350	D	2
3351	D	2
2367	D	3
2368	C	4
2369	C	4
3307	C	5
3321	B	1
3322	B	1
3323	E	1
3324	E	2
3325	E	2
3326	E	3
3327	E	3
3328	E	3
3329	D	4
3330	E	3
3331	E	3
3332	E	3
3333	D	2
2348	C	4
2349	C	4
2350	D	4
2351	D	4
2352	E	2
2353	C	5
2354	D	5
2355	C	6
2356	D	6
2359	A	5
2360	B	5
2361	B	1
2362	B	1
2363	D	3
2364	D	3
2365	D	2
2366	C	5
2330	E	4
2331	C	2
2333	E	3
2334	E	3
2335	E	3
2336	E	3
2337	E	3
2338	E	3
2339	B	3
2340	C	3
2341	D	2
2342	C	2
2343	D	1
2344	D	3
2345	D	2
2346	C	4
2347	C	4
3	C	2
1321	D	6
1322	B	6
1323	B	6
1324	B	6
1325	B	2
1326	B	1
1328	E	4
2321	E	3
2322	E	3
2323	E	2
2324	E	2
2325	D	4
2326	E	4
2327	E	3
2328	E	3
2329	D	4

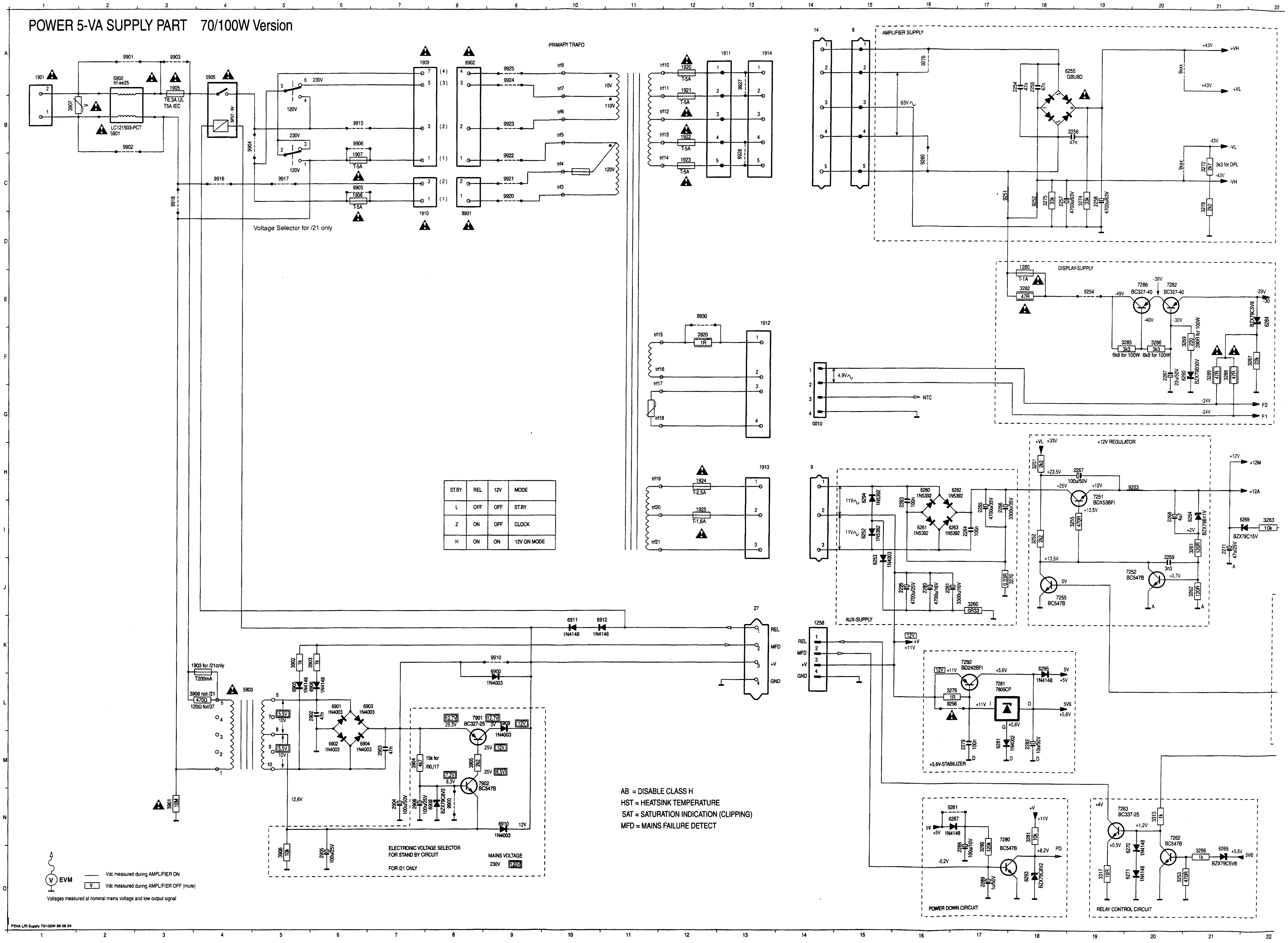


printed fuse
in case of damage
insert fuse T1A
4822 071 51002

This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

PowerSVA Supply-L/R Amplifier Board Layout stage .6 1999 09 20

POWER 5-VA SUPPLY PART 70/100W Version

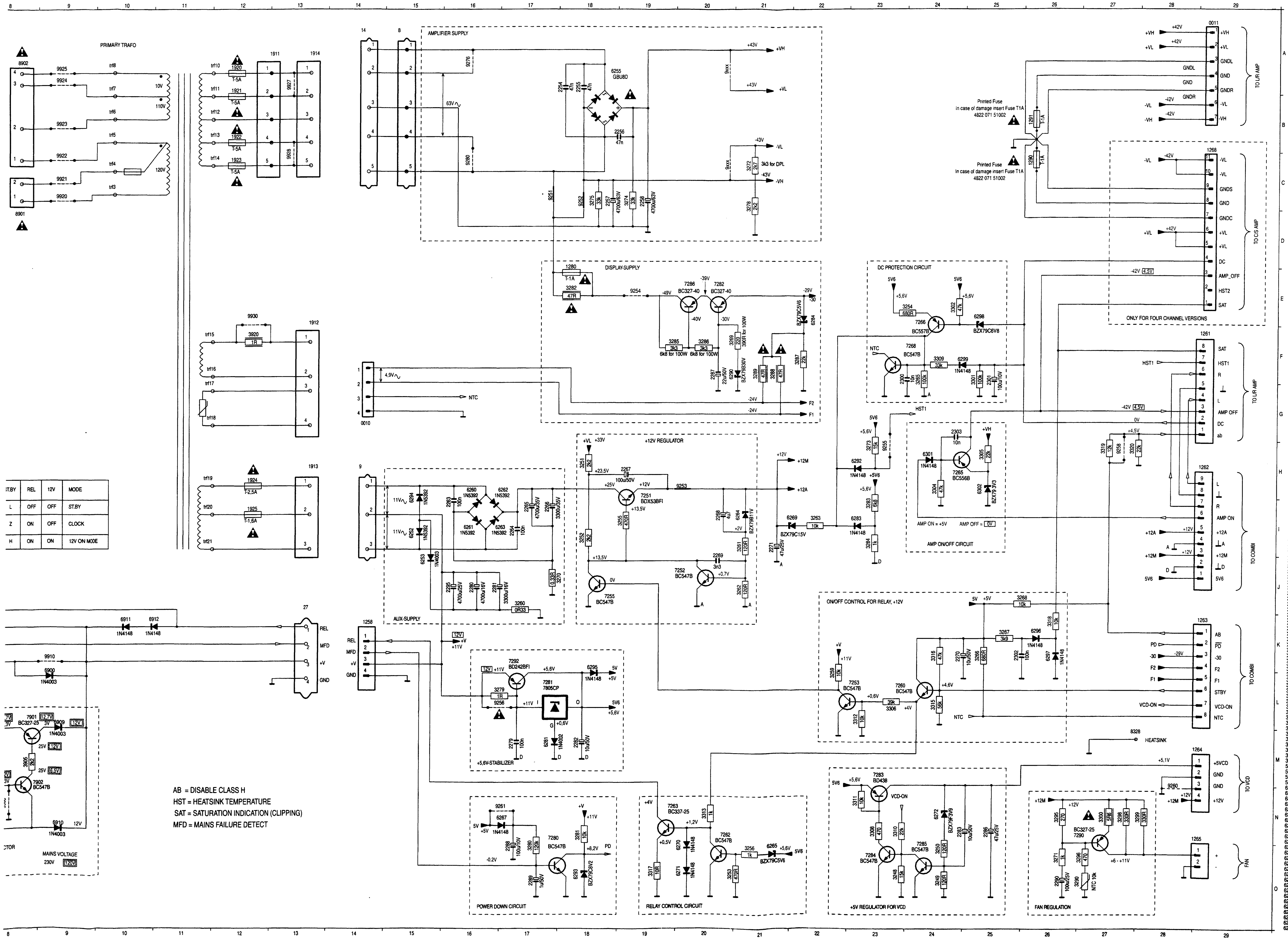

PRIMARY TRAFO
Voltage Selector for /21 only
AMPLIFIER SUPPLY
DISPLAY-SUPPLY
AUX-SUPPLY
+12V REGULATOR
+5,6V-STABILIZER
POWER DOWN CIRCUIT
RELAY CONTROL CIRCUIT
ELECTRONIC VOLTAGE SELECTOR FOR STAND BY CIRCUIT
FOR /21 ONLY
MAINS VOLTAGE
230V
+VH
+VL
-VL
-VH
F2
F1
NTC
+12M
+12A
REL
MFD
+V
GND
5V
5V6
PD
EVM
P5VA L/R Supply 70/100W 99 09 24

ST.BY	REL	12V	MODE
L	OFF	OFF	ST.BY
Z	ON	OFF	CLOCK
H	ON	ON	12V ON MODE

AB = DISABLE CLASS H
HST = HEATSINK TEMPERATURE
SAT = SATURATION INDICATION (CLIPPING)
MFD = MAINS FAILURE DETECT

.... Vdc measured during AMPLIFIER ON
V Vdc measured during AMPLIFIER OFF (mute)

Voltages measured at nominal mains voltage and low output signal


PRIMARY TRAFO
AMPLIFIER SUPPLY
DISPLAY-SUPPLY
DC PROTECTION CIRCUIT
ONLY FOR FOUR CHANNEL VERSIONS
TO L/R AMP
TO C/S AMP
TO COMBI
TO VCD
FAN
+12V REGULATOR
AUX-SUPPLY
AMP ON/OFF CIRCUIT
AMP ON = +5V
AMP OFF = 0V
ON/OFF CONTROL FOR RELAY, +12V
+5,6V-STABILIZER
POWER DOWN CIRCUIT
RELAY CONTROL CIRCUIT
+5V REGULATOR FOR VCD
FAN REGULATION
HEATSINK
MAINS VOLTAGE
230V
Printed Fuse
In case of damage insert Fuse T1A
4822 071 51002
6255 GBU8D
7251 BDX53BFI
7281 7805CP
7292 BD242BFI
7283 BD438
7286 BC327-40
7282 BC327-40
7266 BC557B
7265 BC556B
7901 BC327-25
7902 BC547B
+VH
+VL
-VL
-VH
GNDL
GNDR
GNDS
GNDC
AMP_OFF
HST2
SAT
HST1
AMP ON
NTC
STBY
VCD-ON
PD
REL
MFD
GND

T.BY	REL	12V	MODE
L	OFF	OFF	ST.BY
Z	ON	OFF	CLOCK
H	ON	ON	12V ON MODE

AB = DISABLE CLASS H
HST = HEATSINK TEMPERATURE
SAT = SATURATION INDICATION (CLIPPING)
MFD = MAINS FAILURE DETECT

0010	G14
0011	B29
1258	K14
1261	F29
1262	H29
1263	M29
1264	M29
1265	N29
1268	B29
1280	E18
1290	C26
1291	B26
14	A14
1901	A 1
1903	J15
1905	A 3
1906	C 6
1907	C 6
1909	A 7
1910	D 7
1911	A13
1912	E13
1913	H13
1914	A13
1920	A12
1921	A12
1922	B12
1923	C12
1924	H12
1925	I12
2251	A16
2252	A16
2253	B17
2254	A18
2255	A18
2256	B19
2257	C18
2258	C19
2260	C20
2262	C20
2263	I16
2264	I17
2265	I17
2266	I17
2267	H19
2268	I20
2269	J20
2270	K24
2271	I21
2279	M17
2280	J16
2281	J16
2282	M18
2283	N24
2286	N25
2287	F20
2288	O17
2289	O17
2290	O26
2295	J16
2300	F23
2301	F25
2302	K25
2303	G24
27	J13
2902	L 6
2903	M 7
2904	N 7
2905	N 6
2906	N 7
3248	O23
3249	O24
3250	O24
3251	H18
3252	I18
3253	O20
3254	E24
3255	I19
3256	O21
3259	L22
3260	J17
3261	I21
3262	J21
3263	I22
3265	F24
3266	K25
3267	K25
3268	J26
3269	F21
3270	J18
3271	O26
3272	C21
3273	H23
3274	C19
3275	C18
3278	C21
3279	L17
3280	O17
3281	N18
3282	E18
3283	I23
3284	I23
3285	F19
3286	F20
3287	F22
3288	F21
3289	F21
3290	O26
3295	N26
3296	O27
3298	N27
3299	N28
3300	N27
3301	F25
3302	E24
3304	H24
3305	H25
3306	L23
3308	N23
3309	F24
3310	N23
3311	N23
3312	L23
3313	N20
3315	L24
3316	K24
3317	O19
3318	K26
3319	H27
3320	H27
3901	N 3
3902	K 5
3903	K 6
3904	M 7
3905	M 8
3906	N 5
3907	B 1
3908	L 4
3920	F12
5901	B 2
5902	A 2
5903	L 4
5905	A 4
6251	A17
6252	I15
6253	J15
6255	A18
6260	H16
6261	I16
6262	H17
6263	I17
6264	I20
6265	N21
6267	N17
6269	I22
6270	O19
6271	O19
6272	N24
6281	M17
6283	I23
6284	E22
6289	F21
6290	F20
6292	H23
6293	O18
6294	H15
6295	K18
6296	K26
6297	K26
6298	E25
6299	F24
6301	H24
6302	H25
6900	K 9
6901	L 6
6902	M 6
6903	L 7
6904	M 6
6905	L 5
6906	L 5
6908	N 8
6909	L 9
6910	N 9
6911	K10
6912	K11
7251	H19
7252	J20
7253	L23
7255	J18
7260	L24
7262	N20
7263	N20
7265	H24
7266	E24
7268	F24
7280	N17
7281	L17
7282	E20
7283	M23
7284	O23
7285	O24
7286	E20
7290	N26
7292	K17
7901	L 8
7902	M 8
8	A15
8901	D 8
8902	A 8
9	H14
9251	C17
9252	C18
9253	H20
9254	E19
9255	H23
9256	L17
9258	H27
9260	N28
9261	N17
9276	A16
9280	C16
9900	N 8
9901	A 2
9902	B 2
9903	A 3
9904	B 4
9905	C 6
9906	B 6
9910	K 9
9911	F 1
9912	G 1
9913	G 1
9914	G 1
9915	B 6
9916	C 4
9917	C 5
9918	C 3
9920	C 9
9921	C 9
9922	C 9
9923	B 9
9924	A 9
9925	A 9
9927	A13
9928	C13
9930	E12
trf10	A11
trf11	A11
trf12	B11
trf13	B11
trf14	C11
trf15	F12
trf16	F11
trf17	G12
trf18	G11
trf19	H11
trf20	I11
trf21	I11
trf3	C10
trf4	C10
trf5	B10
trf6	B10
trf7	A10
trf8	A10

CS 53 354

COMPONENT LAYOUT MAINS BOARD

Interconnection Board

primary side

8901 E 5
8902 D 5
9920 E 4
9921 E 4
9922 E 4
9923 D 4
9924 D 4
9925 D 4
trf3 E 4
trf4 E 4
trf5 E 4
trf6 D 4
trf7 D 4
trf8 D 4

secondary side

1911 A 5
1912 B 5
1913 C 5
1914 A 5
1920 A 4
1921 A 4
1922 A 4
1923 B 5
1924 C 4
1925 C 4
3920 B 4
9927 A 5
9928 A 5

9930 B 4
9931 A 4
9932 A 4
9933 A 4
9934 A 4
9935 B 4
9936 B 4
9937 B 4
9938 B 4
9939 C 4
9940 C 4
9941 C 4
9942 C 4

trf10 A 3
trf11 A 3
trf12 A 3
trf13 A 3
trf14 B 3
trf15 B 3
trf16 B 3
trf17 B 3
trf18 C 3
trf19 C 3
trf20 C 3
trf21 C 3

Mains Board

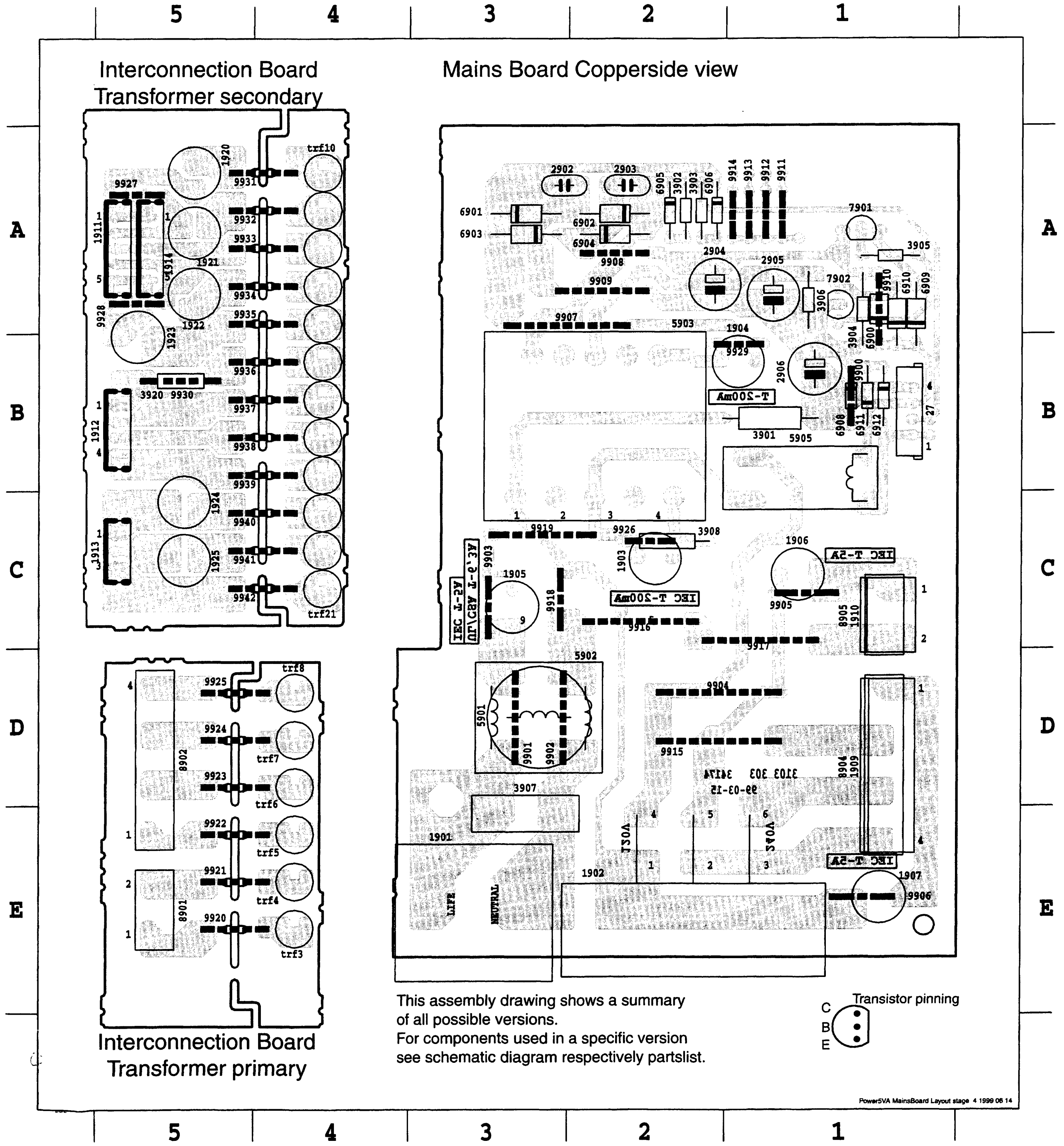
27 B 1
1901 E 3
1902 E 2
1903 C 2
1904 B 2
1905 C 3
1906 C 1
1907 E 1
1909 D 1
1910 C 1
2902 A 3
2903 A 2
2904 A 2

2905 A 1
2906 B 1
3901 B 1
3902 A 2
3903 A 2
3904 B 1
3905 A 1
3906 A 1
3907 E 3
3908 C 2
5901 D 3
5902 D 3
5903 B 2

5905 C 1
6900 B 1
6901 A 3
6902 A 2
6903 A 3
6904 A 2
6905 A 2
6906 A 2
6908 B 1
6909 B 1
6910 B 1
6911 B 1
6912 B 1

7901 A 1
7902 B 1
8904 D 1
8905 C 1
9900 B 1
9901 D 3
9902 D 3
9903 C 3
9904 D 2
9905 C 1
9906 E 1
9907 B 3
9908 A 2

9909 A 2
9910 B 1
9911 A 1
9912 A 1
9913 A 2
9914 A 2
9915 D 2
9916 D 2
9917 D 1
9918 C 3
9919 C 3
9926 C 2
9929 B 2


5
4
3
2
1
A
B
C
D
E
Interconnection Board
Transformer secondary
Mains Board Copperside view
Interconnection Board
Transformer primary
Transistor pinning
C
B
E
IEC T-5A
IEC T-200mA
IEC T-2A
T-200mA
T30A
LIFE
NEUTRAL
PowerSVA MainsBoard Layout stage 4 1999 06 14

This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

COMPONENT LAYOUT SUPPLY PART & L/R AMPLIFIER PART

9360 A 2
9361 A 2
9362 A 2
9363 A 2
9364 A 4
9365 A 3
9366 A 3
9367 A 3
9368 A 3
9369 A 3
9370 A 2

9314 A 9
9315 B 9
9316 D 13
T256 C 13
T257 C 12
T258 D 13
T265 B 10
T305 A 11
T312 A 7
T314 A 10
T315 B 9
T316 A 10
----
16 A 4
1327 A 4
2357 A 5
3381 A 4

9291 C 9
9292 C 11
9293 A 9
9294 A 10
9298 E 8
9299 B 12
9300 B 12
9302 A 11
9303 B 11
9304 B 12
9305 A 10
9306 B 12
9307 B 10
9308 C 9
9309 B 8
9312 A 9
9313 A 8

9272 A 11
9273 E 12
9274 A 13
9275 C 10
9276 D 9
9277 B 11
9278 E 9
9279 E 10
9280 D 10
9281 D 10
9284 C 12
9285 C 12
9286 C 9
9287 C 10
9288 D 10
9289 B 11
9290 C 10

9254 C 7
9255 B 7
9256 E 12
9258 A 7
9259 B 9
9260 A 10
9261 A 12
9262 A 8
9263 A 11
9264 A 11
9265 E 12
9266 E 12
9267 E 12
9268 E 13
9269 E 12
9270 A 10
9271 E 11

7263 A 13
7265 A 7
7266 B 7
7268 A 7
7280 A 12
7281 E 11
7282 B 10
7283 A 10
7284 A 11
7285 A 11
7286 B 9
7290 D 7
7292 E 12
8328 C 9
9251 E 9
9252 E 8
9253 E 12

6292 D 7
6293 B 12
6294 B 13
6295 A 10
6296 A 9
6297 A 9
6298 B 7
6299 B 7
6301 B 11
6302 B 7
7251 E 13
7252 C 12
7253 A 8
7254 D 12
7255 C 12
7260 A 8
7262 B 13

6263 C 13
6264 C 11
6265 A 13
6267 A 13
6269 B 11
6270 B 12
6271 C 12
6272 A 10
6281 E 12
6283 B 11
6284 B 10
6285 B 8
6286 B 8
6287 B 8
6288 B 8
6289 B 10
6290 B 10

3310 A 9
3311 A 10
3312 B 9
3313 B 12
3315 A 8
3316 A 8
3317 A 13
3318 A 9
3319 A 7
3320 A 7
6251 E 10
6252 B 13
6253 B 13
6255 E 9
6260 D 13
6261 D 13
6262 C 13

3287 B 11
3288 B 10
3289 B 10
3290 E 8
3295 D 7
3296 E 8
3298 D 7
3299 D 7
3300 D 7
3301 B 7
3302 B 7
3303 E 13
3304 B 9
3305 C 9
3306 A 8
3308 A 10
3309 B 7

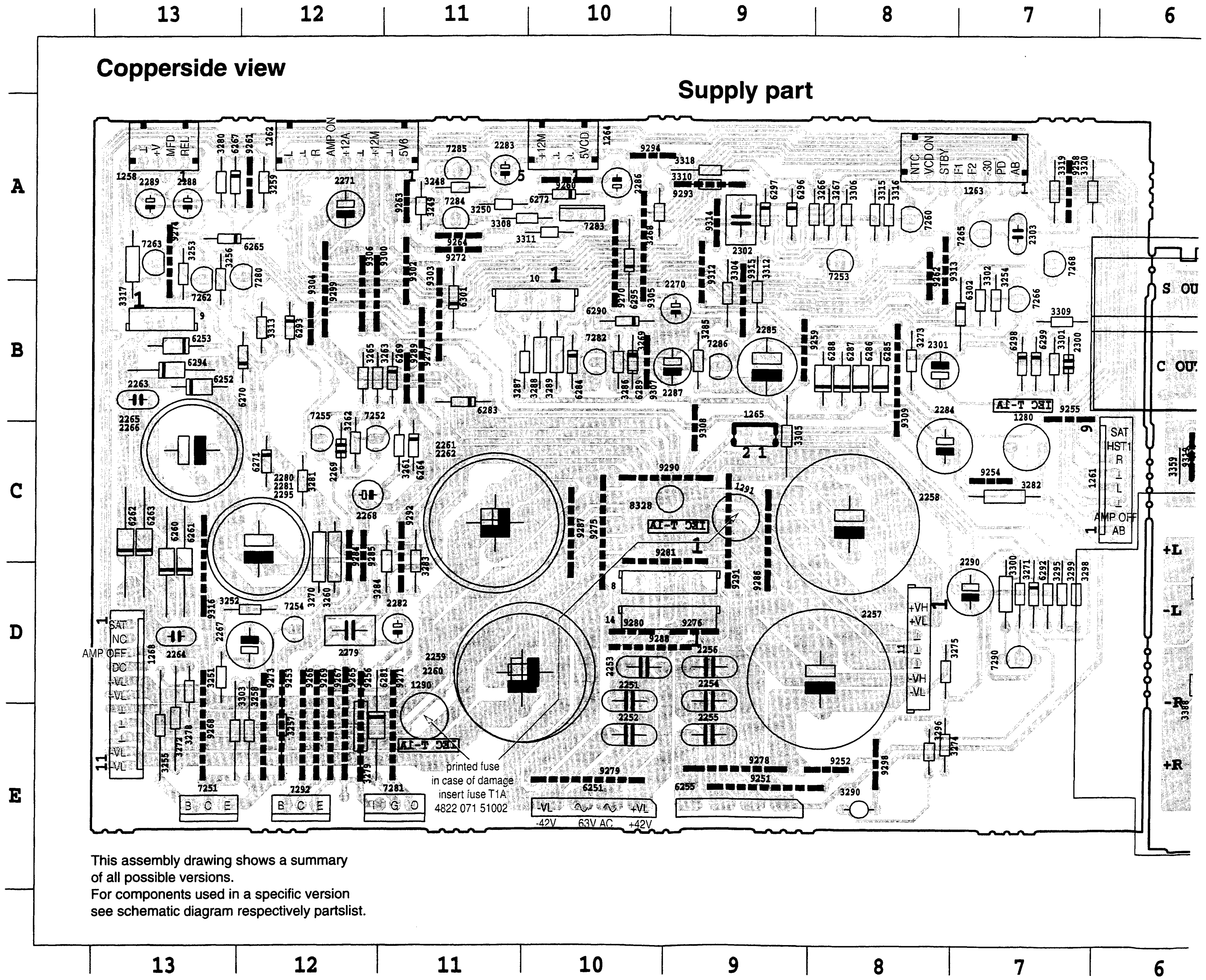
3268 A 10
3269 B 10
3270 C 12
3271 D 7
3272 E 13
3273 B 8
3274 E 8
3275 D 8
3278 D 13
3279 E 12
3280 A 13
3281 C 12
3282 C 7
3283 D 11
3284 D 11
3285 B 9
3286 B 10

3250 A 11
3251 D 13
3252 D 12
3253 A 13
3254 B 7
3255 E 13
3256 B 13
3257 E 12
3258 E 12
3259 A 12
3260 C 12
3261 C 11
3262 C 12
3263 B 12
3265 B 12
3266 A 8
3267 A 8

2281 C 12
2282 D 11
2283 A 11
2284 C 8
2285 B 9
2286 A 10
2287 B 9
2288 A 13
2289 A 13
2290 D 7
2295 C 12
2300 B 7
2301 B 8
2302 A 9
2303 A 7
3248 A 11
3249 A 11

2257 D 8
2258 C 8
2259 D 10
2260 D 11
2261 C 11
2262 C 11
2263 B 13
2264 D 13
2265 C 13
2266 C 13
2267 D 12
2268 C 12
2269 C 12
2270 B 9
2271 A 12
2279 D 12
2280 C 12

14 D 9
1258 A 13
1261 C 6
1262 A 12
1263 A 7
1264 A 10
1265 C 9
1268 D 13
1280 C 7
1290 E 11
1291 C 9
2251 D 10
2252 E 10
2253 D 10
2254 D 9
2255 E 9
2256 D 9


13
12
11
10
9
8
7
6
A
B
C
D
E
Copperside view
Supply part
NTC
VCD ON
STBY
AMP ON
SAT
HST1
AMP OFF
AB
+L
-L
-R
+R
S OU
C OU
+VH
+VL
-VH
-VL
IEC T-4A
IEC T-1A
-42V
63V AC
+42V

printed fuse
in case of damage
insert fuse T1A
4822 071 51002

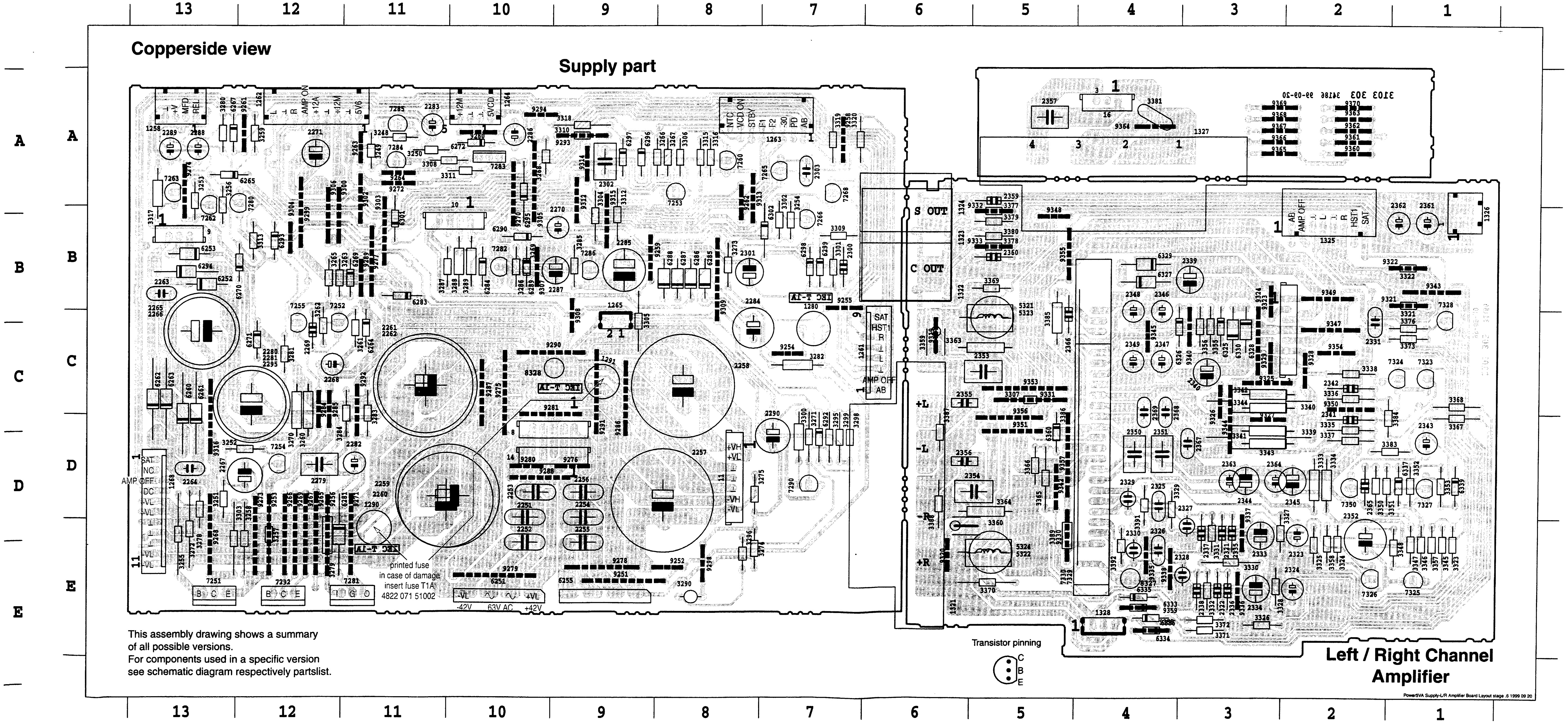
This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

COMPONENT LAYOUT SUPPLY PART & L/R AMPLIFIER PART

9360	A	2
9361	A	2
9362	A	2
9363	A	2
9364	A	4
9365	A	3
9366	A	3
9367	A	3
9368	A	3
9369	A	3
9370	A	2
9314	A	9
9315	B	9
9316	D	13
T256	C	13
T257	C	12
T258	D	13
T265	B	10
T305	A	11
T312	A	7
T314	A	10
T315	B	9
T316	A	10

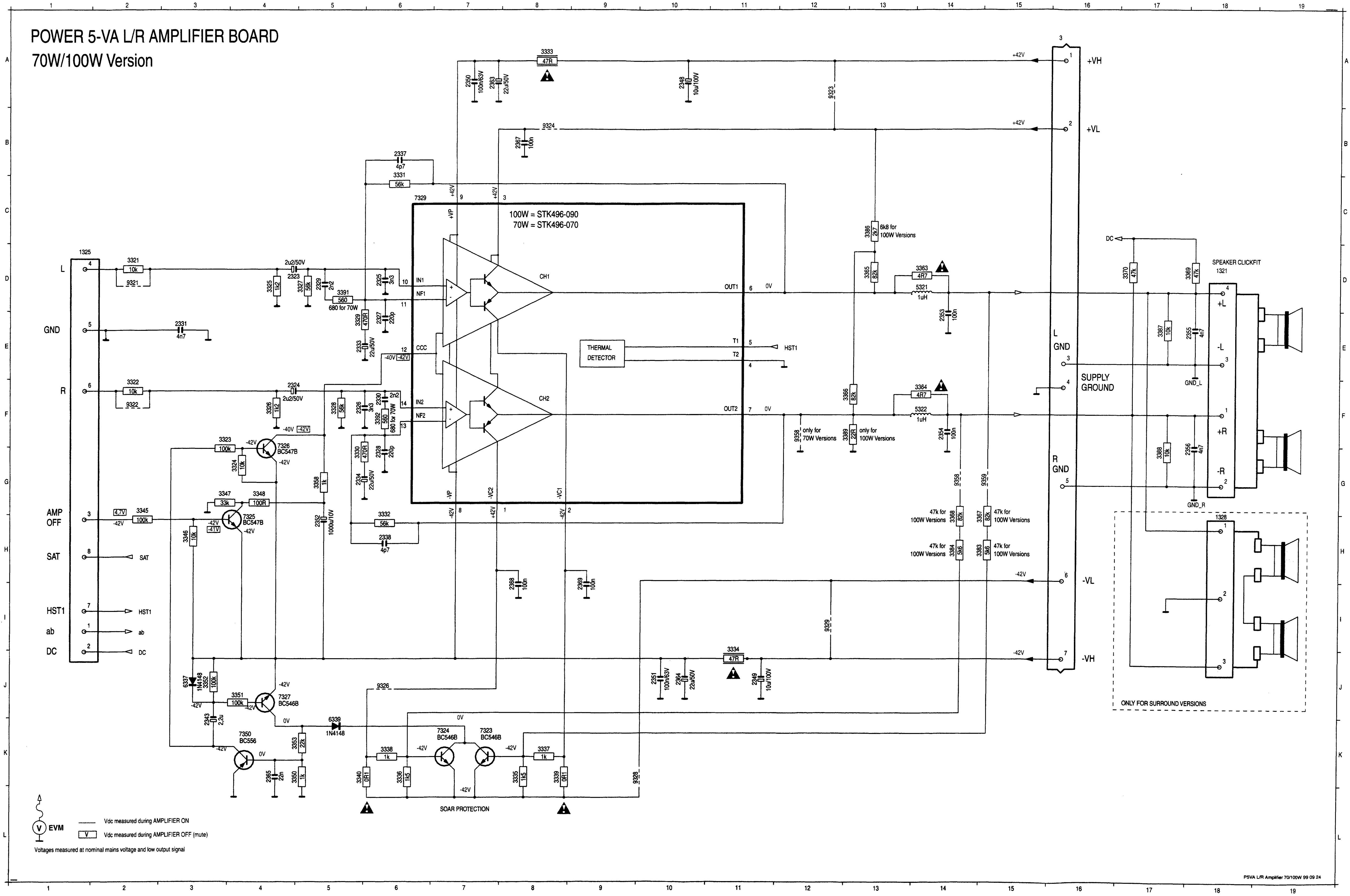
16	A	4
1327	A	4
2357	A	5
3381	A	4
9291	C	9
9292	C	11
9293	A	9
9294	A	10
9298	E	8
9299	B	12
9300	B	12
9302	A	11
9303	B	11
9304	B	12
9305	A	10
9306	B	12
9307	B	10
9308	C	9
9309	B	8
9312	A	9
9313	A	8
9272	A	11
9273	E	12
9274	A	13
9275	C	10
9276	D	9
9277	B	11
9278	E	9
9279	E	10
9280	D	10
9281	D	10
9284	C	12
9285	C	12
9286	C	9
9287	C	10
9288	D	10
9289	B	11
9290	C	10
9254	C	7
9255	B	7
9256	E	12
9258	A	7
9259	B	9
9260	A	10
9261	A	12
9262	A	8
9263	A	11
9264	A	11
9265	E	12
9266	E	12
9267	E	12
9268	E	13
9269	E	12
9270	A	10
9271	E	11
7263	A	13
7265	A	7
7266	B	7
7268	A	7
7280	A	12
7281	E	11
7282	B	10
7283	A	10
7284	A	11
7285	A	11
7286	B	9
7290	D	7
7292	E	12
8328	C	9
9251	E	9
9252	E	8
9253	E	12
6292	D	7
6293	B	12
6294	B	13
6295	A	10
6296	A	9
6297	A	9
6298	B	7
6299	B	7
6301	B	11
6302	B	7
7251	E	13
7252	C	12
7253	A	8
7254	D	12
7255	C	12
7260	A	8
7262	B	13
6263	C	13
6264	C	11
6265	A	13
6267	A	13
6269	B	11
6270	B	12
6271	C	12
6272	A	10
6281	E	12
6283	B	11
6284	B	10
6285	B	8
6286	B	8
6287	B	8
6288	B	8
6289	B	10
6290	B	10
3310	A	9
3311	A	10
3312	B	9
3313	B	12
3315	A	8
3316	A	8
3317	A	13
3318	A	9
3319	A	7
3320	A	7
6251	E	10
6252	B	13
6253	B	13
6255	E	9
6260	D	13
6261	D	13
6262	C	13
3287	B	11
3288	B	10
3289	B	10
3290	E	8
3295	D	7
3296	E	8
3298	D	7
3299	D	7
3300	D	7
3301	B	7
3302	B	7
3303	E	13
3304	B	9
3305	C	9
3306	A	8
3308	A	10
3309	B	7
3268	A	10
3269	B	10
3270	C	12
3271	D	7
3272	E	13
3273	B	8
3274	E	8
3275	D	8
3278	D	13
3279	E	12
3280	A	13
3281	C	12
3282	C	7
3283	D	11
3284	D	11
3285	B	9
3286	B	10
3250	A	11
3251	D	13
3252	D	12
3253	A	13
3254	B	7
3255	E	13
3256	B	13
3257	E	12
3258	E	12
3259	A	12
3260	C	12
3261	C	11
3262	C	12
3263	B	12
3265	B	12
3266	A	8
3267	A	8
2281	C	12
2282	D	11
2283	A	11
2284	C	8
2285	B	9
2286	A	10
2287	B	9
2288	A	13
2289	A	13
2290	D	7
2295	C	12
2300	B	7
2301	B	8
2302	A	9
2303	A	7
3248	A	11
3249	A	11
2257	D	8
2258	C	8
2259	D	10
2260	D	11
2261	C	11
2262	C	11
2263	B	13
2264	D	13
2265	C	13
2266	C	13
2267	D	12
2268	C	12
2269	C	12
2270	B	9
2271	A	12
2279	D	12
2280	C	12
14	D	9
1258	A	13
1261	C	6
1262	A	12
1263	A	7
1264	A	10
1265	C	9
1268	D	13
1280	C	7
1290	E	11
1291	C	9
2251	D	10
2252	E	10
2253	D	10
2254	D	9
2255	E	9
2256	D	9
9348	B	5
9349	B	2
9350	C	2
9351	D	5
9353	C	5
9354	C	2
9355	B	5
9356	D	5
9357	D	5
9358	E	4
9359	E	4
T321	A	1

8	D	9
9	B	13
10	B	10
11	D	8
9327	D	3
9328	C	2
9329	C	3
9330	E	5
9331	C	5
9332	B	5
9333	B	5
9335	E	4
9336	E	3
9337	E	3
9338	E	4
9340	C	3
9342	D	5
9343	B	1
9344	D	3
9345	C	4
9347	C	2
7324	C	1
7325	E	1
7326	E	2
7327	D	1
7328	C	1
7329	D	4
7330	C	4
7350	D	2
8327	E	4
9319	C	6
9320	E	6
9321	B	1
9322	B	1
9323	B	3
9324	C	3
9325	C	3
9326	C	3
5322	E	5
5323	C	5
5324	E	5
6325	C	3
6326	C	4
6327	B	4
6328	C	3
6329	B	4
6330	C	3
6333	E	4
6334	E	4
6335	E	4
6336	E	4
6337	D	1
6339	D	1
6360	D	5
7323	C	1
3372	E	3
3373	C	1
3376	C	1
3377	B	5
3378	B	5
3379	B	5
3380	B	5
3383	D	1
3384	D	1
3385	C	5
3386	D	5
3387	D	6
3388	D	6
3389	E	5
3391	D	4
3392	E	4
5321	C	5
3352	D	1
3353	D	1
3355	C	3
3356	C	3
3357	E	1
3358	E	2
3359	C	6
3360	E	6
3363	C	5
3364	D	5
3365	D	5
3366	D	5
3367	D	1
3368	C	1
3369	B	5
3370	E	5
3371	E	3
3334	D	2
3335	D	2
3336	C	2
3337	D	2
3338	C	2
3339	D	2
3340	C	2
3341	D	3
3342	C	3
3343	D	3
3344	C	3
3345	E	1
3346	E	1
3347	E	1
3348	E	1
3350	D	2
3351	D	2
2367	D	3
2368	C	4
2369	C	4
3307	C	5
3321	B	1
3322	B	1
3323	E	1
3324	E	2
3325	E	2
3326	E	3
3327	E	3
3328	E	3
3329	D	4
3330	E	3
3331	E	3
3332	E	3
3333	D	2
2348	C	4
2349	C	4
2350	D	4
2351	D	4
2352	E	2
2353	C	5
2354	D	5
2355	C	6
2356	D	6
2359	A	5
2360	B	5
2361	B	1
2362	B	1
2363	D	3
2364	D	3
2365	D	2
2366	C	5
2330	E	4
2331	C	2
2333	E	3
2334	E	3
2335	E	3
2336	E	3
2337	E	3
2338	E	3
2339	B	3
2340	C	3
2341	D	2
2342	C	2
2343	D	1
2344	D	3
2345	D	2
2346	C	4
2347	C	4
3	C	2
1321	D	6
1322	B	6
1323	B	6
1324	B	6
1325	B	2
1326	B	1
1328	E	4
2321	E	3
2322	E	3
2323	E	2
2324	E	2
2325	D	4
2326	E	4
2327	E	3
2328	E	3
2329	D	4



This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

POWER 5-VA L/R AMPLIFIER BOARD
70W/100W Version


100W = STK496-090
70W = STK496-070
7329
IN1
NF1
IN2
NF2
CCC
CH1
CH2
OUT1
OUT2
T1
T2
THERMAL DETECTOR
HST1
+VP
-VP
-VC1
-VC2
1325
L
GND
R
AMP OFF
SAT
HST1
ab
DC
+VH
+VL
-VL
-VH
SUPPLY GROUND
L GND
R GND
SPEAKER CLICKFIT
1321
1328
+L
-L
+R
-R
GND_L
GND_R
ONLY FOR SURROUND VERSIONS
SOAR PROTECTION
7326 BC547B
7325 BC547B
7327 BC546B
7350 BC556
7324 BC546B
7323 BC546B
6339 1N4148
6337 1N4148
3321 10k
3322 10k
3323 100k
3324 10k
3345 100k
3346 10k
3347 33k
3348 100R
3351 100k
3352 100k
3353 22k
3350 1k
3358 1k
3325 1k2
3326 1k2
3327 56k
3328 56k
3329 470R
3330 470R
3331 56k
3332 56k
3391 560
680 for 70W
3392 560
680 for 70W
3333 47R
3334 47R
3336 1k5
3335 1k5
3338 1k
3337 1k
3340 0R1
3339 0R1
3363 4R7
3364 4R7
5321 1uH
5322 1uH
3365 82k
3366 82k
3386 2k7
6k8 for 100W Versions
3389 22R
only for 100W Versions
9356 only for 70W Versions
3368 82k
3367 82k
47k for 100W Versions
3384 5k6
3383 5k6
3370 47k
3369 47k
3387 10k
3388 10k
2323 2u2/50V
2324 2u2/50V
2325 3n3
2326 3n3
2329 2n2
2330 2n2
2327 220p
2328 220p
2333 22u/50V
2334 22u/50V
2337 4p7
2338 4p7
2331 4n7
2332 1000u/10V
2343 2,2u
2365 22n
2350 100n/63V
2363 22u/50V
2348 10u/100V
2367 100n
2368 100n
2369 100n
2351 100n/63V
2364 22u/50V
2349 10u/100V
2353 100n
2354 100n
2355 4n7
2356 4n7
9321
9322
9323
9324
9326
9328
9329
9358
9359
+42V
-42V
-40V
-41V
4,7V
0V
DC

EVM

...... Vdc measured during AMPLIFIER ON

V Vdc measured during AMPLIFIER OFF (mute)

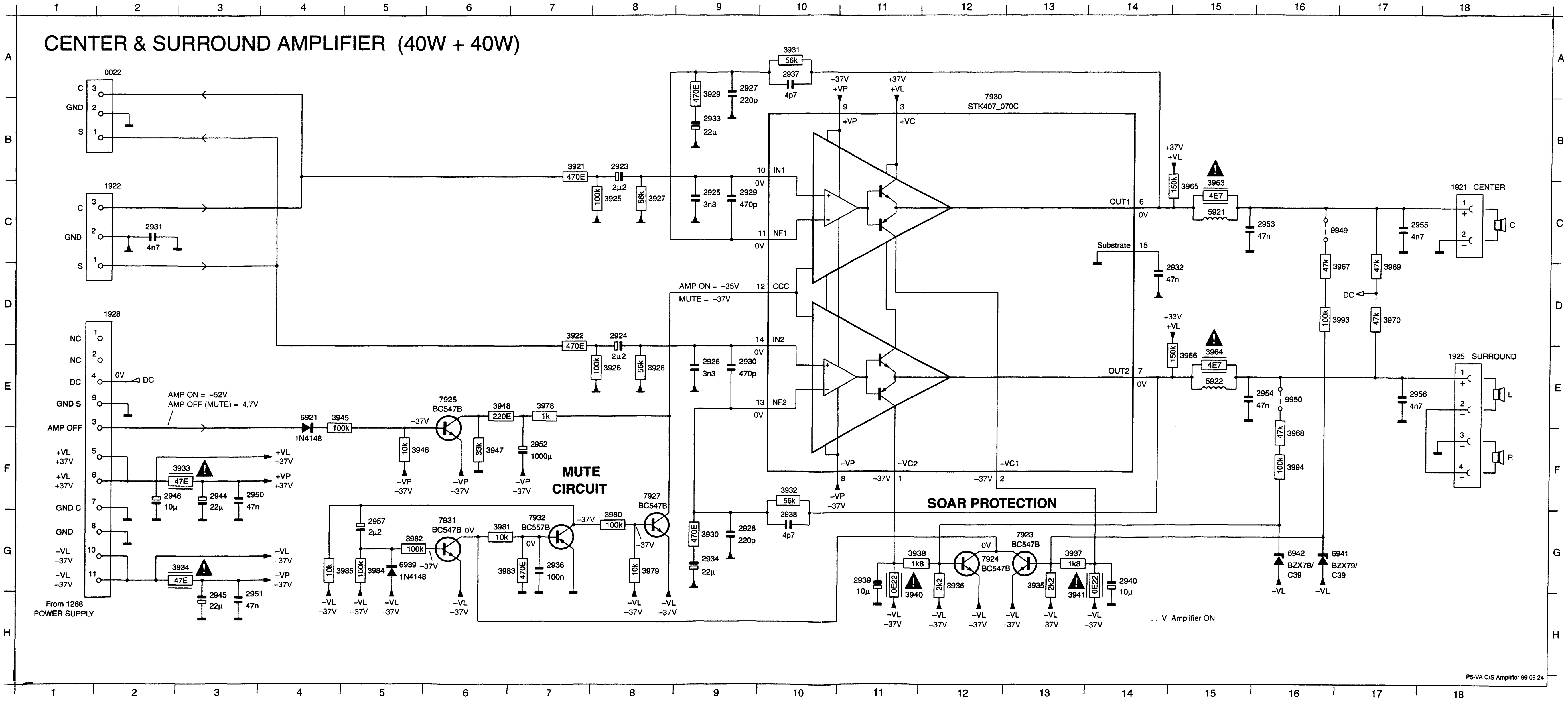
Voltages measured at nominal mains voltage and low output signal

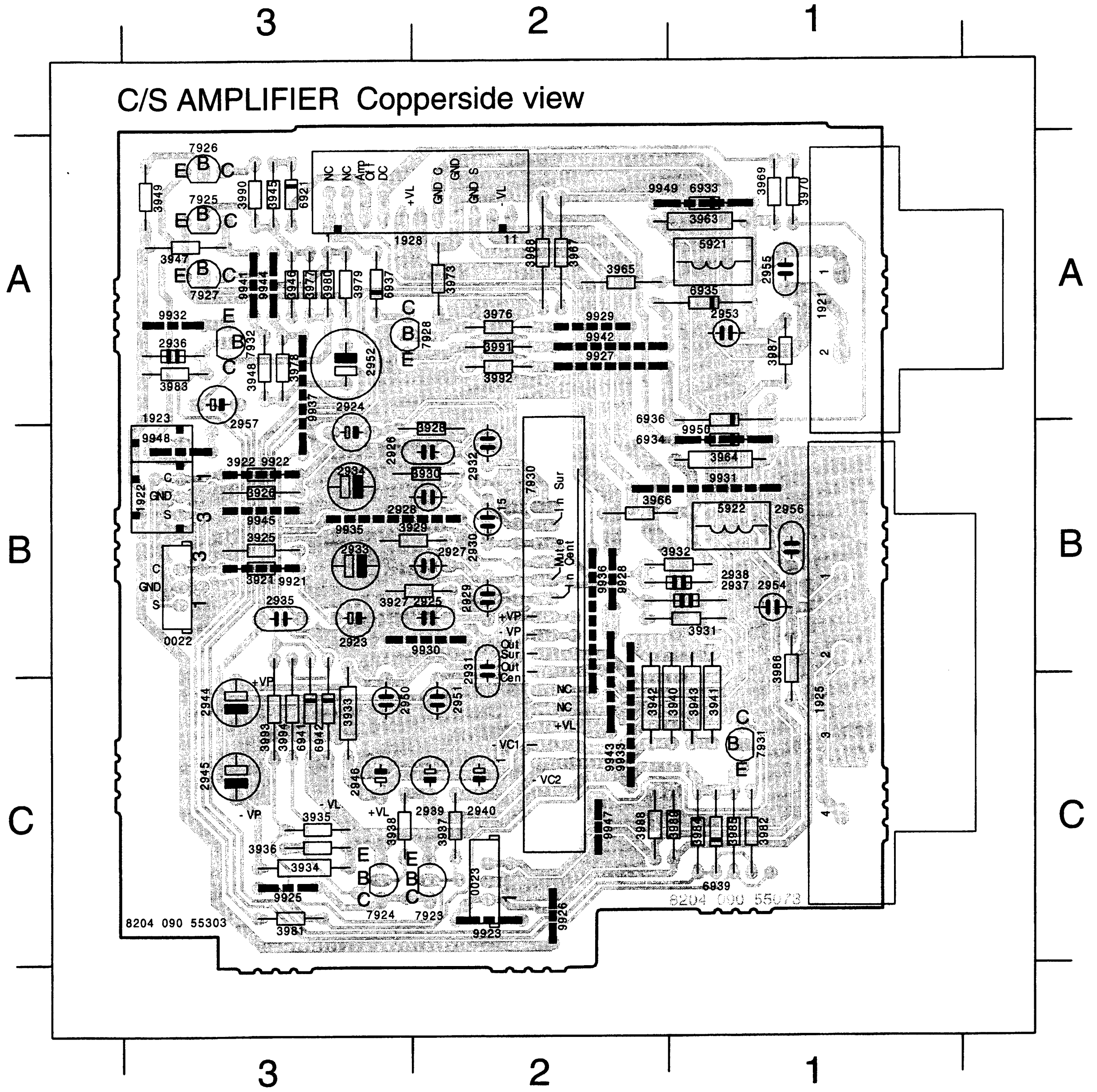
P5VA L/R Amplifier 70/100W 99 09 24

1321	D18
1325	D 1
1328	G18
2321	B 6
2322	H 6
2323	D 4
2324	F 4
2325	D 5
2326	F 5
2327	E 6
2328	G 6
2329	D 6
2330	F 6
2331	E 3
2333	E 5
2334	G 5
2335	B 6
2336	H 6
2337	B 6
2338	H 6
2341	K 7
2342	K 6
2343	K 3
2344	A 8
2345	J10
2346	B10
2347	I11
2348	A10
2349	J11
2350	A 7
2351	J10
2352	H 5
2353	E14
2354	F14
2355	E18
2356	G18
2363	A 7
2364	J10
2365	K 4
2366	C12
2367	B8
2368	I8
2369	I9
3	A16
3321	D 2
3322	F 2
3323	F 3
3324	G 4
3325	D 4
3326	F 4
3327	D 5
3328	F 5
3329	E 5
3330	G 5
3331	C 6
3332	H 6
3333	A 8
3334	J11
3335	K 8
3336	K 6
3337	K 8
3338	K 6
3339	K 8
3340	K 5
3345	G 2
3346	H 3
3347	G 3
3348	G 4
3350	K 5
3351	J 4
3352	J 3
3353	K 5
3355	C12
3356	I12
3358	G 5
3363	D14
3364	E14
3365	D13
3366	F13
3367	H15
3368	H14
3369	D18
3370	D17
3383	H15
3384	H14
3385	D12
3386	C13
3387	E17
3388	G17
3389	F13
5321	D14
5322	F14
5323	D14
5324	F14
6325	B12
6326	I12
6327	A13
6328	I13
6329	A13
6330	I13
6333	G14
6334	G14
6337	J 3
6339	K 5
6360	C12
7323	K 7
7324	K 7
7325	H 4
7326	G 4
7327	J 4
7329	C 6
7350	K 4
9321	D 2
9322	F 2
9323	A12
9324	J 6
9325	J 6
9326	J 6
9327	K 9
9328	K10
9329	I12
9330	F12
9331	D12
9358	G14
9359	G15

0022	A2	2924	D8	2930	E9	2937	A10	2946	F2	2955	C17	3926	E8	3932	F10	3938	G11	3948	E6	3968	F16	3981	G6	3994	F16	6942	G16	7931	G5
1921	C18	2925	C9	2931	C2	2938	G10	2950	F3	2956	E17	3927	C8	3933	F2	3940	H11	3963	C15	3969	D17	3982	G5	5921	C15	7923	G13	7932	G7
1922	C2	2926	E9	2932	D14	2939	G11	2951	H3	2957	G5	3928	E8	3934	G2	3941	H14	3964	E15	3970	D17	3983	G6	5922	E15	7924	G12	9949	C16
1925	E18	2927	A9	2933	B9	2940	H14	2952	F6	3921	B7	3929	A9	3935	H13	3945	E4	3965	C15	3978	E7	3984	G5	6921	E4	7925	E6	9950	E16
1928	D2	2928	G9	2934	G9	2944	F3	2953	C15	3922	D7	3930	G9	3936	H12	3946	F5	3966	E15	3979	G8	3985	G4	6939	G5	7927	G8		
2923	B8	2929	C9	2936	G7	2945	H3	2954	E15	3925	C8	3931	A10	3937	G13	3947	F6	3967	D16	3980	G8	3993	D16	6941	G16	7930	B12		

CENTER & SURROUND AMPLIFIER (40W + 40W)


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A B C D E F G H
0022
C GND S
1922
C GND S
2931 4n7
1928
NC NC DC GND S AMP OFF
+VL +37V
+VL +37V
GND C GND
–VL –37V
–VL –37V
From 1268 POWER SUPPLY
0V DC
AMP ON = –52V
AMP OFF (MUTE) = 4,7V
6921 1N4148
3945 100k
3933 47E
3934 47E
2946 10µ
2944 22µ
2950 47n
2945 22µ
2951 47n
+VL +37V
+VP +37V
–VL –37V
–VP –37V
7925 BC547B
3946 10k
3947 33k
3948 220E
3978 1k
2952 1000µ
–VP –37V
MUTE CIRCUIT
2957 2µ2
3982 100k
7931 BC547B
0V
3981 10k
7932 BC557B
3983 470E
2936 100n
6939 1N4148
3984
3985 100k
10k
3980 100k
7927 BC547B
3979 10k
–VL –37V
3921 470E
2923 2µ2
3925 100k
3927 56k
3922 470E
2924 2µ2
3926 100k
3928 56k
3931 56k
2937 4p7
3929 470E
2927 220p
2933 22µ
2925 3n3
2929 470p
2926 3n3
2930 470p
3932 56k
2938 4p7
3930 470E
2928 220p
2934 22µ
AMP ON = –35V
MUTE = –37V
+37V +VP
+37V +VL
7930 STK407_070C
9 3
+VP +VC
10 IN1 0V
11 NF1 0V
12 CCC
14 IN2 0V
13 NF2 0V
–VP –VC2 –VC1
8 1 2
–37V
OUT1 6 0V
Substrate 15
OUT2 7 0V
2932 47n
+37V +VL
3965 150k
3963 4E7
5921
2953 47n
+33V +VL
3966 150k
3964 4E7
5922
2954 47n
9949
9950
3967 47k
3993 100k
3969 47k
3970 47k
DC
3968 47k
3994 100k
2955 4n7
2956 4n7
1921 CENTER
C
1925 SURROUND
L R
SOAR PROTECTION
7923 BC547B
7924 BC547B
3938 1k8
3937 1k8
2939 10µ
3940 0E22
3936 2k2
3935 2k2
3941 0E22
2940 10µ
6942 BZX79/C39
6941 BZX79/C39
. . V Amplifier ON
PS-VA C/S Amplifier 99 09 24



C/S AMPLIFIER Copperside view

3
2
1
A
B
C
7926
7925
7927
7928
7932
7930
7931
7923
7924
3949
3947
3990
3945
6921
3946
3977
3980
3979
6937
3973
3941
3944
1928
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3967
3965
9949
6933
3963
3969
3970
5921
6935
2953
2955
1921
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9932
2936
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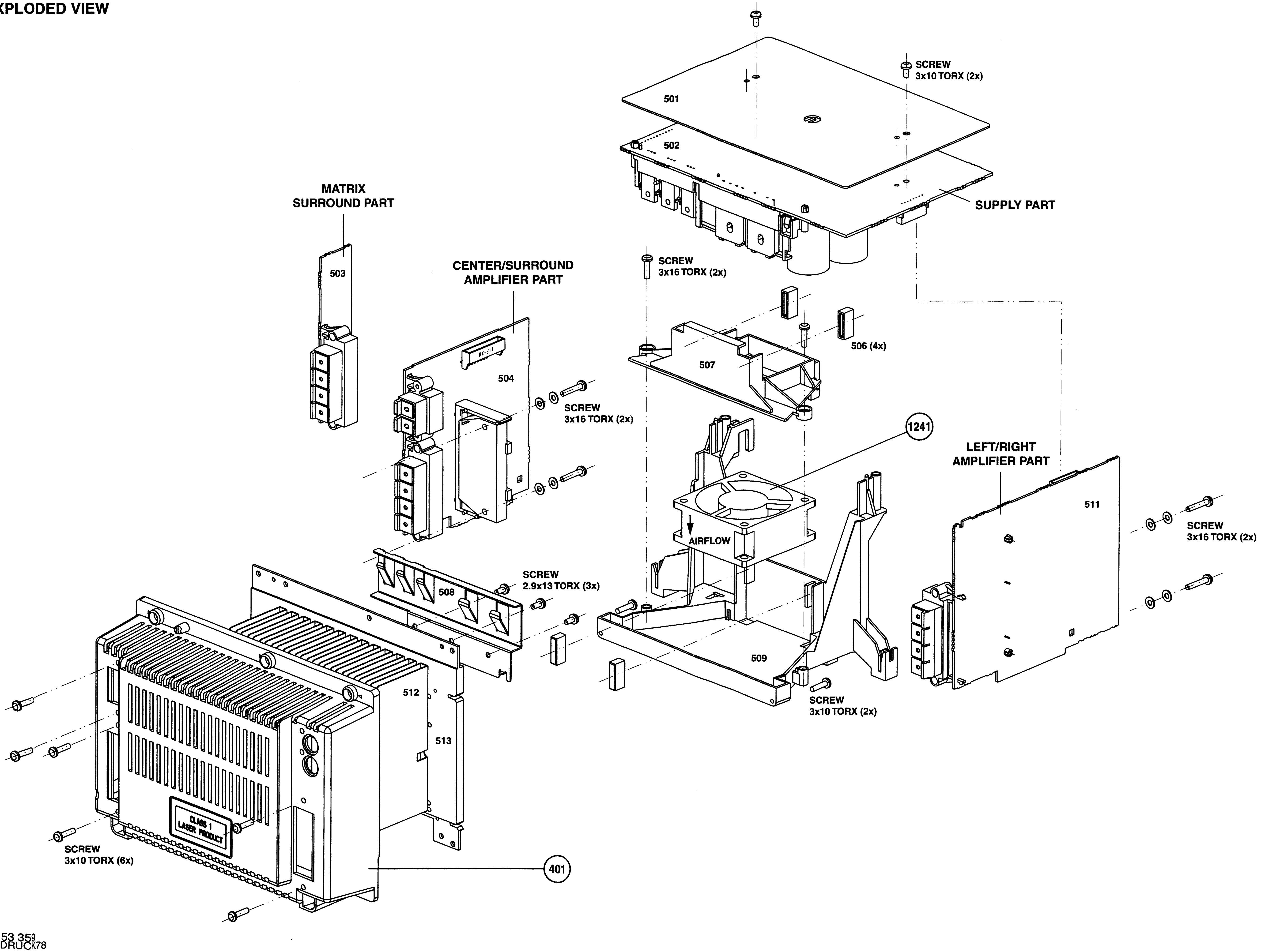
3948
3978
9937
2952
3976
3991
3992
9929
9942
9927
2957
1923
9948
1922
C
GND
S
3922
9922
3926
9945
3925
3921
9921
2935
0022
2924
2934
2933
2923
9935
2926
3928
3930
2928
3929
2927
3927
2925
2929
2932
2930
2931
9930
In Sur
Mute
In Cent
+VP
-VP
Out Sur
Out Cen
NC
+VL
-VC1
-VC2
9936
9928
6936
6934
9950
3984
9931
3966
5922
2956
3932
2938
2937
2954
3931
3986
1925
2944
2945
3993
3994
6941
6942
3933
2946
2950
2951
9943
9933
3942
3940
3943
3941
9947
3935
3936
3934
9925
3981
3938
2989
3937
2940
0023
9923
9926
3988
3989
3984
3985
3982
6939
E
B
C
-VP
-VL
+VL
8204 090 55303
8204 090 55073

0022	B	3
0023	C	2
1921	A	1
1922	B	3
1923	B	3
1925	C	1
1928	A	2
2923	B	3
2924	B	3
2925	B	2
2926	B	2
2927	B	2
2928	B	2
2929	B	2
2930	B	2
2931	B	2
2932	B	2
2933	B	3
2934	B	3
2935	B	3
2936	A	3
2937	B	1
2938	B	1
2939	C	2
2940	C	2
2944	C	3
2945	C	3
2946	C	3
2950	C	3
2951	C	2
2952	A	3
2953	A	1
2954	B	1
2955	A	1
2956	B	1
2957	A	3
3921	B	3
3922	B	3
3925	B	3
3926	B	3
3927	B	2
3928	B	2
3929	B	2
3930	B	2
3931	B	1
3932	B	1
3933	C	3
3934	C	3
3935	C	3
3936	C	3
3937	C	2
3938	C	3
3940	C	1
3941	C	1
3942	C	2
3943	C	1
3945	A	3
3946	A	3
3947	A	3
3948	A	3
3949	A	3
3963	A	1
3964	B	1
3965	A	2
3966	B	2
3967	A	2
3968	A	2
3969	A	1
3970	A	1
3973	A	2
3976	A	2
3977	A	3
3978	A	3
3979	A	3
3980	A	3
3981	C	3
3982	C	1
3983	A	3
3984	C	1
3985	C	1
3986	B	1
3987	A	1
3988	C	2
3989	C	1
3990	A	3
3991	A	2
3992	A	2
3993	C	3
3994	C	3
5921	A	1
5922	B	1
6921	A	3
6933	A	1
6934	B	1
6935	A	1
6936	A	1
6937	A	3
6939	C	1
6941	C	3
6942	C	3
7923	C	2
7924	C	3
7925	A	3
7926	A	3
7927	A	3
7928	A	3
7930	C	2
7931	C	1
7932	A	3
9921	B	3
9922	B	3
9923	C	2
9925	C	3
9926	C	2
9927	A	2
9928	B	2
9929	A	2
9930	B	2
9931	B	1
9932	A	3
9933	C	2
9935	B	3
9936	B	2
9937	A	3
9941	A	3
9942	A	2
9943	C	2
9944	A	3
9945	B	3
9947	C	2
9948	B	3
9949	A	1
9950	B	1

EXPLODED VIEW


SCREW
3x10 TORX (2x)
501
502
SUPPLY PART
MATRIX
SURROUND PART
503
CENTER/SURROUND
AMPLIFIER PART
504
SCREW
3x16 TORX (2x)
SCREW
3x16 TORX (2x)
506 (4x)
507
1241
LEFT/RIGHT
AMPLIFIER PART
511
SCREW
3x16 TORX (2x)
AIRFLOW
508
SCREW
2.9x13 TORX (3x)
509
SCREW
3x10 TORX (2x)
512
513
CLASS 1
LASER PRODUCT
SCREW
3x10 TORX (6x)
401

MECHANICAL PARTS LIST

0047	482225610555	Rucksack - L/R and Matrix Surr.
0047	482225610557	Rucksack - L/R and C/S
0047	482225610558	Rucksack - L/R
1241	482236111161	DC Bruchless Fan
0002	482225610556	Holder STK47/P5-VA
0029	482246693148	Spacer 5mm

ELECTRICAL PARTS LIST - MAINS BOARD

MISCELLANEOUS

1901	482226531015	⚠	Mains Socket
1901#	482226531016	⚠	Mains Socket
1902*	482227210269	⚠	Voltage Selector
1903*	482207152001	⚠	Fuse T200mA 250V
1905^	482207155002	⚠	Fuse T5A 250V
1905#	482225251123	⚠	Fuse T6,3A 250V
1906*	482207155002	⚠	Fuse T5A 250V
1907*	482207155002	⚠	Fuse T5A 250V
1909*	482226710728	⚠	Primary Connector
1910	482226520723	⚠	Primary Connector
1920	482207155002	⚠	Fuse T5A 250V
1923	482207155002	⚠	Fuse T5A 250V
1924	482207152502	⚠	Fuse T2,5A 250V
1925	482207151602	⚠	Fuse T1,6A 250V

CAPACITORS

2902	482212143526	47nF 5% 250V
2903	482212143526	47nF 5% 250V
2904*	482212440255	100µF 20% 63V
2905*	482212481029	100µF 20% 25V

RESISTORS

3901#	482205321106	⚠	10M 5% 0,5W
3902	482205011002		1k 1% 0,4W
3903	482205011002		1k 1% 0,4W
3904^	482211652244		15k 5% 0,5W
3904*	482211652283		4k7 5% 0,5W
3905*	482211652256		2k2 5% 0,5W
3906*	482211683864		10k 5% 0,5W
3908^	482205310471		470R 5% 1W
3920*	482205210108	⚠	1R 5% 0,33W

COILS & FILTERS

5901^	482215711832	⚠	400µH 3A
5902*	482215711628	⚠	Mains Choke
5903*	482214611144	⚠	Standby Transformer
5903^	482214611143	⚠	Standby Transformer
5903#	482214611142	⚠	Standby Transformer
5905	482228010382	⚠	Relay

DIODES

6900^	482213031878	1N4003G
6901	482213031878	1N4003G
6902	482213031878	1N4003G
6903	482213031878	1N4003G
6904	482213031878	1N4003G
6905	482213030621	1N4148
6906	482213030621	1N4148
6908*	482213034382	BZX79-C8V2
6909*	482213032245	BYV10-40
6910*	482213031878	1N4003G
6911	482213030621	1N4148
6912	482213030621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7901*	482213041246	BC327-25
7902*	482213040959	BC547B

* For /21/21M only
^ Except for /21/21M
# For /37 only

Note : Only the parts mentioned in this list are normal service spare parts.

ELECTRICAL PARTS LIST - SUPPLY & LEFT/RIGHT AMPLIFIER BOARD

MISCELLANEOUS

1321	482226731176	L/R Loudspeaker Terminal
1327	482226510912	Matrix Surround Terminal

CAPACITORS

2254	482212143526	47nF 5% 250V
2255	482212143526	47nF 5% 250V
2256	482212143526	47nF 5% 250V
2257	482212480415	4700µF 20% 50V
2258	482212480415	4700µF 20% 50V
2263	532212142386	100nF 5% 63V
2264	532212142386	100nF 5% 63V
2265	482212480563	4700µF 20% 35V
2267	482212440255	100µF 20% 63V
2268	482212440769	4,7µF 20% 100V

ELECTRICAL PARTS LIST - SUPPLY & LEFT/RIGHT AMPLIFIER BOARD

CAPACITORS

2269	482212210577	3,3nF 10% 16V
2270	482212440248	10µF 20% 63V
2271	482212440433	47µF 20% 25V
2279	532212142386	100nF 5% 63V
2280	482212412328	6800µF 16V
2282	482212440248	10µF 20% 63V
2289	482212421913	1µF 20% 63V
2290	482212440207	100µF 20% 25V
2300	482212151387	10nF 20% 16V
2301	482212441584	100µF 20% 10V
2303	482212141857	10nF 5% 250V
2323	482212422652	2,2µF 20% 50V
2324	482212422652	2,2µF 20% 50V
2325	482212233532	3,3nF 5% 50V
2326	482212233532	3,3nF 5% 50V
2329	532212232818	2,2nF 10% 100V
2330	532212232818	2,2nF 10% 100V
2331	532212232261	4,7nF 10% 100V
2333	482212481151	22µF 50V
2334	482212481151	22µF 50V
2337	482212210465	4,7pF 10% 50V
2338	482212210465	4,7pF 10% 50V
2341	482212611585	22nF +80/-20% 25V
2342	482212611585	22nF +80/-20% 25V
2343	482212422652	2,2µF 20% 50V
2344	482212440764	22µF 100V
2345	482212440764	22µF 100V
2348	482212481043	10µF 20% 100V
2349	482212481043	10µF 20% 100V
2350	532212142386	100nF 5% 63V
2351	532212142386	100nF 5% 63V
2352	482212440181	220µF 20% 10V
2353	532212142386	100nF 5% 63V
2354	532212142386	100nF 5% 63V
2355	532212232261	4,7nF 10% 100V
2356	532212232261	4,7nF 10% 100V
2365	482212612785	47nF 50V
2367	532212142386	100nF 5% 63V
2368	532212142386	100nF 5% 63V
2369	532212142386	100nF 5% 63V

RESISTORS

3251	482211652256		2k2 5% 0,5W
3252	482211652256		2k2 5% 0,5W
3254	482211652228		680R 5% 0,5W
3255	482211683883		470R 5% 0,5W
3259	482205021003		10k 1% 0,6W
3260	482211711342		0R33 5% 2W
3261	482211652206		120R 5% 0,5W
3262	482211652206		120R 5% 0,5W
3263	482205021003		10k 1% 0,6W
3265	482211652234		100k 5% 0,5W
3266	482211652228		680R 5% 0,5W
3267	482211652276		3k9 5% 0,5W
3268	482205021003		10k 1% 0,6W
3269	482211683872		220R 5% 0,5W
3269	482211683881		390R 5% 0,5W
3270	482211711342		0R33 5% 2W
3271	482205011002		1k 1% 0,4W
3272	482211652263		2k7 5% 0,5W
3273	482211652244		15k 5% 0,5W
3274	482205023303		33k 1% 0,6W
3275	482205023303		33k 1% 0,6W
3278	482211652256		2k2 5% 0,5W
3280	482211652239		120k 5% 0,5W
3281	482205021003		10k 1% 0,6W
3282	482205210479	⚠	47R 5% 0,33W
3285	482211652269		3k3 5% 0,5W
3285	482211683961		6k8 5%
3286	482211652269		3k3 5% 0,5W
3286	482211683961		6k8 5%
3287	482211652257		22k 5% 0,5W
3288	482205210479	⚠	47R 5% 0,33W
3289	482205210479	⚠	47R 5% 0,33W
3290	482211712063		NTC DC 5W 10k 5%
3295	482211683876		270R 5% 0,5W
3296	482211683883		470R 5% 0,5W
3298	482211652219		330R 5% 0,5W
3299	482211652219		330R 5% 0,5W
3300	482205210568	⚠	5R6 5% 0,33W
3302	482211683884		47k 5% 0,5W
3304	482211683884		47k 5% 0,5W
3305	482211652257		22k 5% 0,5W
3306	482211683882		39k 5% 0,5W
3309	482205023303		33k 1% 0,6W
3312	482205021003		10k 1% 0,6W
3313	482205011002		1k 1% 0,4W
3315	482211652291		56k 5% 0,5W
3316	482211683884		47k 5% 0,5W
3317	482205210109	⚠	10R 5% 0,33W
3321	482205021003		10k 1% 0,6W
3322	482205021003		10k 1% 0,6W
3323	482211652234		100k 5% 0,5W
3324	482205021003		10k 1% 0,6W
3325	482211652207		1k2 5% 0,5W
3326	482211652207		1k2 5% 0,5W
3327	482211652291		56k 5% 0,5W
3328	482211652291		56k 5% 0,5W
3329	482211652226		560R 5% 0,5W
3329	482211652228		680R 5% 0,5W
3330	482211652226		560R 5% 0,5W
3330	482211652228		680R 5% 0,5W
3331	482211652291		56k 5% 0,5W
3332	482211652291		56k 5% 0,5W
3333	482205210479	⚠	47R 5% 0,33W
3334	482205210479	⚠	47R 5% 0,33W

ELECTRICAL PARTS LIST - SUPPLY & LEFT/RIGHT AMPLIFIER BOARD

RESISTORS

3335	482211652243		1k5 5% 0,5W
3336	482211652243		1k5 5% 0,5W
3337	482205011002		1k 1% 0,4W
3338	482205011002		1k 1% 0,4W
3339	482211380633	⚠	0R1 5% 3W
3340	482211380633	⚠	0R1 5% 3W
3345	482211652234		100k 5% 0,5W
3346	482205021003		10k 1% 0,6W
3347	482205023303		33k 1% 0,6W
3348	482211683872		220R 5% 0,5W
3350	482205011002		1k 1% 0,4W
3351	482211652234		100k 5% 0,5W
3352	482211652234		100k 5% 0,5W
3353	482211652257		22k 5% 0,5W
3358	482205011002	⚠	1k 1% 0,4W
3363	482205310478	⚠	4R7 5% 1W
3364	482205310478	⚠	4R7 5% 1W
3365	482211652304		82k 5% 0,5W
3366	482211652304		82k 5% 0,5W
3367	482211652304		82k 5% 0,5W
3367	482211683884		47k 5% 0,5W
3368	482211652304		82k 5% 0,5W
3368	482211683884		47k 5% 0,5W
3369	482211683884		47k 5% 0,5W
3370	482211683884		47k 5% 0,5W
3383	482211652289		5k6 5% 0,5W
3383	482211683884		47k 5% 0,5W
3384	482211652289		5k6 5% 0,5W
3384	482211683884		47k 5% 0,5W
3386	482211652263		2k7 5% 0,5W
3386	482211683961		6k8 5%
3387	482205021003		10k 1% 0,6W
3388	482205021003		10k 1% 0,6W
3389	482205210229		22R 5% 0,33W
3391	482211683872		220R 5% 0,5W
3392	482211683872		220R 5% 0,5W

COILS & FILTERS

5321	482215770599	IND FXD BEAD EMI
5322	482215770599	IND FXD BEAD EMI

DIODES

6252	532213080686		1N5392
6253	482213031878		1N4003G
6255	482213011139	⚠	GBU8D
6260	532213080686		1N5392
6261	532213080686		1N5392
6262	532213080686		1N5392
6263	532213080686		1N5392
6264	933166880133		BZX79-B11
6269	482213034281		BZX79-C15
6270	482213030621		1N4148
6271	482213030621		1N4148
6281	482213031878		1N4003G
6284	482213034173		BZX79-C5V6
6290	933166980133		BZX79-B30
6292	482213030621		1N4148
6293	482213034382		BZX79-C8V2
6294	532213080686		1N5392
6295	482213030621		1N4148
6298	482213034278		BZX79-C6V8
6299	482213030621		1N4148
6301	482213030621		1N4148
6302	532213031504		BZX79-C3V3
6337	482213030621		1N4148
6339	482213030621		1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7251	932213923687	BDX53BFP
7252	482213040959	BC547B
7253	482213040959	BC547B
7255	482213040959	BC547B
7260	482213040959	BC547B
7263	482213040981	BC337-25
7265	482213041691	BC556B
7266	482213044568	BC557B
7268	482213040959	BC547B
7280	482213040959	BC547B
7281	482220931841	L7805CP
7282	482213041327	BC327-40
7286	482213041327	BC327-40
7290	482213041246	BC327-25
7323	482213044461	BC546B
7324	482213044461	BC546B
7325	482213040959	BC547B
7326	482213040959	BC547B
7327	482213044461	BC546B
7329	482220917383	STk496-090
7329	482220917385	STK496-070
7329	932214856682	STK496-070C
7350	482213041691	BC556B

Note : Only the parts mentioned in this list are normal service spare parts.

ELECTRICAL PARTS LIST - CENTER/SURROUND AMPLIFIER BOARD

MISCELLANEOUS

1921	482226510464	Center Speaker Terminal
1925	482226510912	Surround Speaker Terminal

CAPACITORS

2923	482212422652	2,2µF 20% 50V
2924	482212422652	2,2µF 20% 50V
2925	482212233532	3,3nF 5% 50V
2926	482212233532	3,3nF 5% 50V
2927	532212232334	220pF 10% 100V
2928	532212232334	220pF 10% 100V
2929	532212232311	470pF 10% 100V
2930	532212232311	470pF 10% 100V
2931	532212232261	4,7nF 10% 100V
2932	482212233449	47nF 30% 50V
2933	482212481151	22µF 50V
2934	482212481151	22µF 50V
2936	482212612882	100nF +80/-20% 50V
2937	482212210465	4,7pF 10% 50V
2938	482212210465	4,7pF 10% 50V
2939	482212440248	10µF 20% 63V
2940	482212440248	10µF 20% 63V
2944	482212481151	22µF 50V
2945	482212481151	22µF 50V
2946	482212440248	10µF 20% 63V
2950	482212233449	47nF 30% 50V
2951	482212233449	47nF 30% 50V
2952	482212440181	220µF 20% 10V
2953	482212233449	47nF 30% 50V
2954	482212233449	47nF 30% 50V
2955	532212232261	4,7nF 10% 100V
2956	532212232261	4,7nF 10% 100V
2957	482212422652	2,2µF 20% 50V

RESISTORS

3921	482211683883		470R 5% 0,5W
3922	482211683883		470R 5% 0,5W
3925	482211652234		100k 5% 0,5W
3926	482211652234		100k 5% 0,5W
3927	482211652291		56k 5% 0,5W
3928	482211652291		56k 5% 0,5W
3929	482211683883		470R 5% 0,5W
3930	482211683883		470R 5% 0,5W
3931	482211652291		56k 5% 0,5W
3932	482211652291		56k 5% 0,5W
3933	482205210479	⚠	47R 5% 0,33W
3934	482205210479	⚠	47R 5% 0,33W
3935	482211652256		2k2 5% 0,5W
3936	482211652256		2k2 5% 0,5W
3937	482211652249		1k8 5% 0,5W
3938	482211652249		1k8 5% 0,5W
3940	482211711744	⚠	0R22 5% 1W
3941	482211711744	⚠	0R22 5% 1W
3945	482211652234		100k 5% 0,5W
3946	482205021003		10k 1% 0,6W
3947	482205023303		33k 1% 0,6W
3948	482211683872		220R 5% 0,5W
3963	482205310478	⚠	4R7 5% 1W
3964	482205310478	⚠	4R7 5% 1W
3965	482211652245		150k 5% 0,5W
3966	482211652245		150k 5% 0,5W
3967	482211683884		47k 5% 0,5W
3968	482211683884		47k 5% 0,5W
3969	482211683884		47k 5% 0,5W
3970	482211683884		47k 5% 0,5W
3978	482205011002		1k 1% 0,4W
3979	482205021003		10k 1% 0,6W
3980	482211652234		100k 5% 0,5W
3981	482205021003		10k 1% 0,6W
3982	482211652234		100k 5% 0,5W
3983	482211683883		470R 5% 0,5W
3984	482211652234		100k 5% 0,5W
3985	482205021003		10k 1% 0,6W
3993	482211652234		100k 5% 0,5W
3994	482211652234		100k 5% 0,5W

COILS & FILTERS

5921	482215762255	Coil 18,5 Turns
5922	482215762255	Coil 18,5 Turns

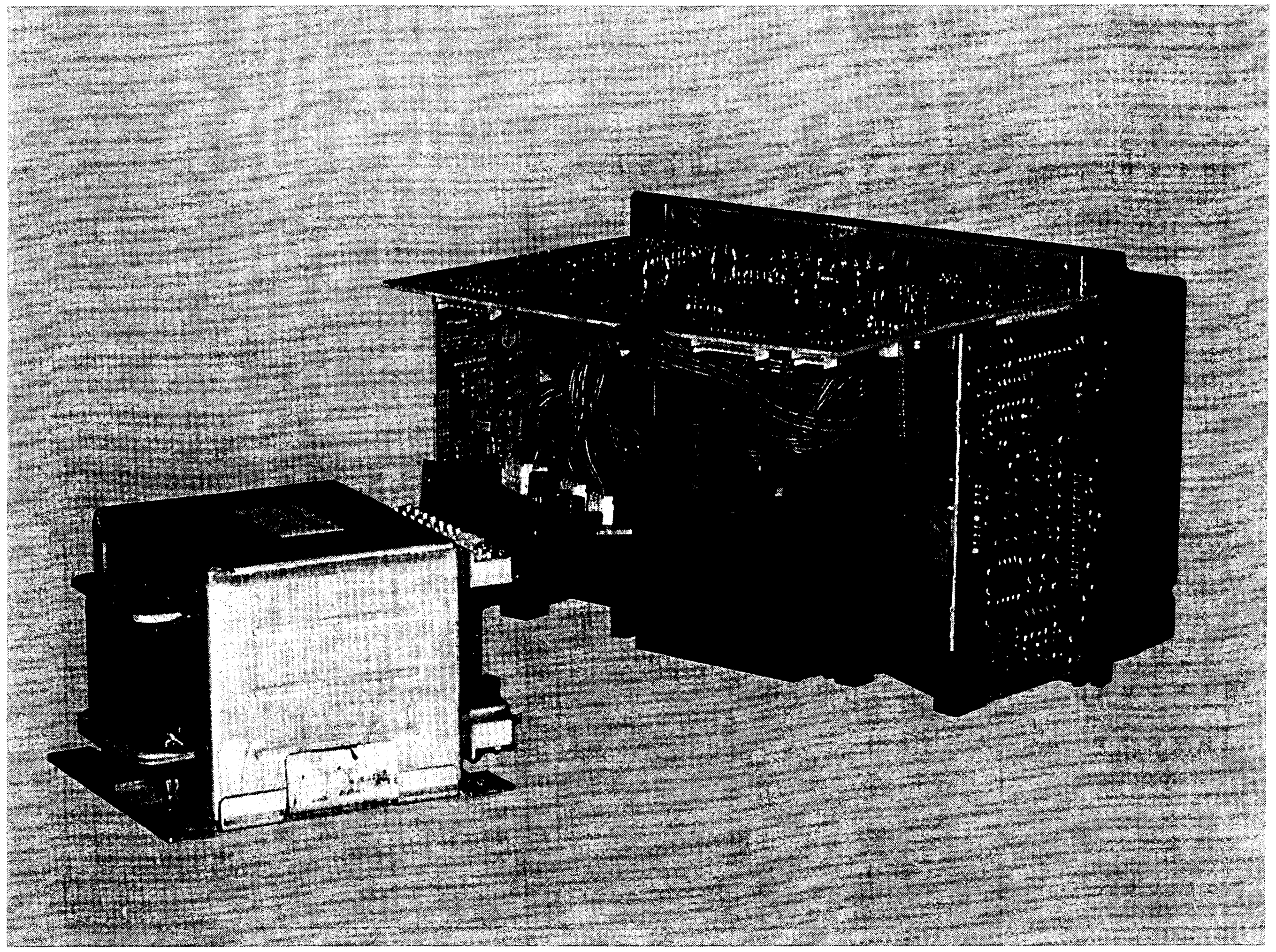
DIODES

6921	482213030621	1N4148
6939	482213030621	1N4148
6941	482213034145	BZX79-C39
6942	482213034145	BZX79-C39

TRANSISTORS & INTEGRATED CIRCUITS

7923	482213040959	BC547B
7924	482213040959	BC547B
7925	482213040959	BC547B
7927	482213040959	BC547B
7930	932214856682	STK496-070C
7931	482213040959	BC547B
7932	482213044568	BC557B

Note: Only the parts mentioned in this list are normal service spare parts.



POWER 5-VA Module

(120 / 130W Version)

Stage .6

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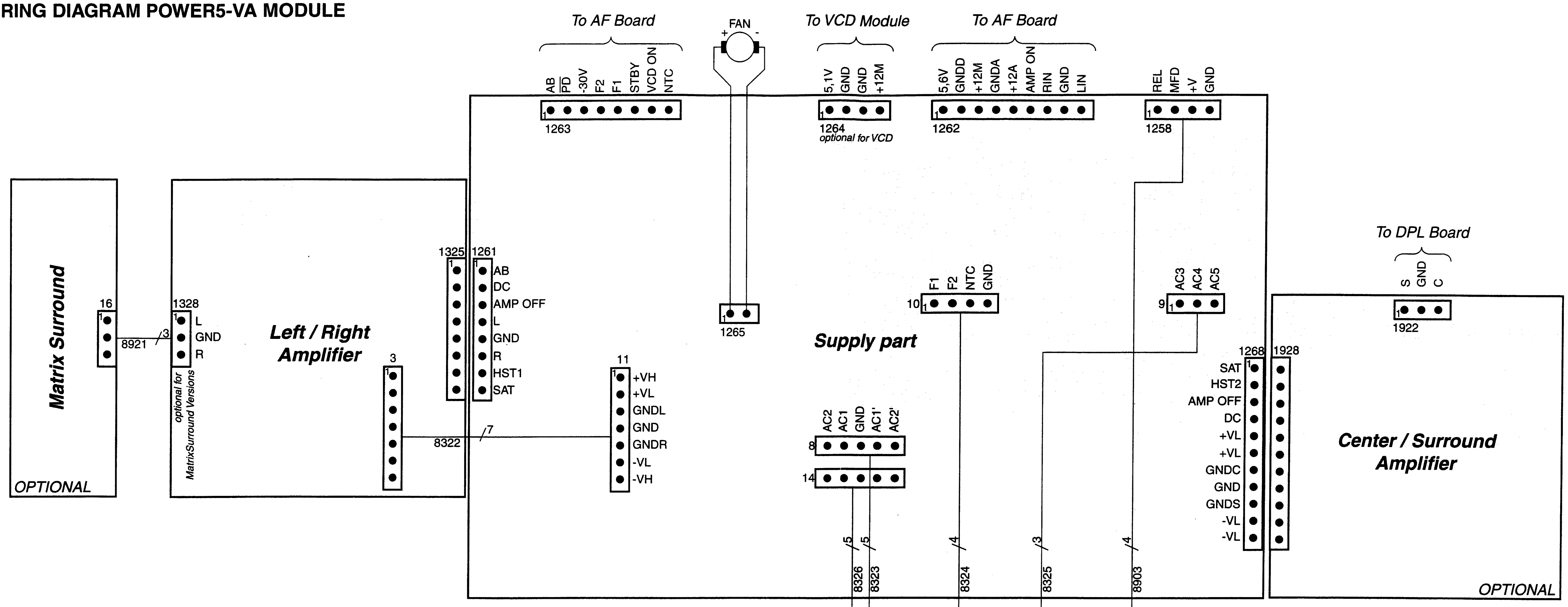
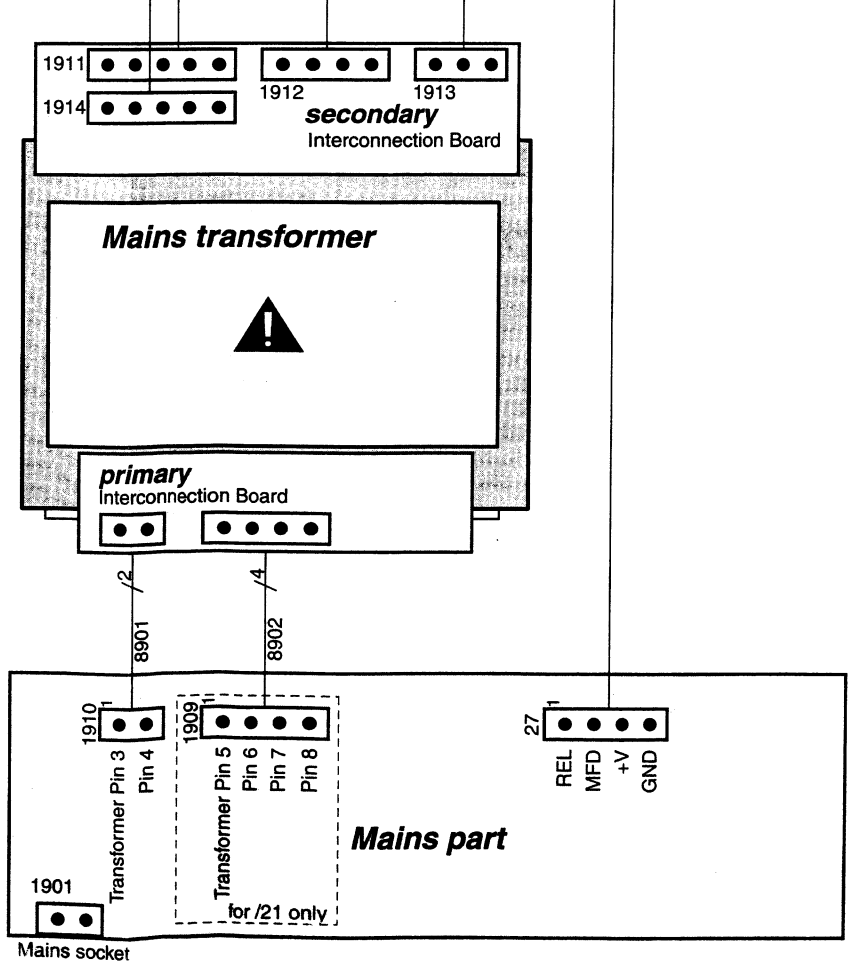
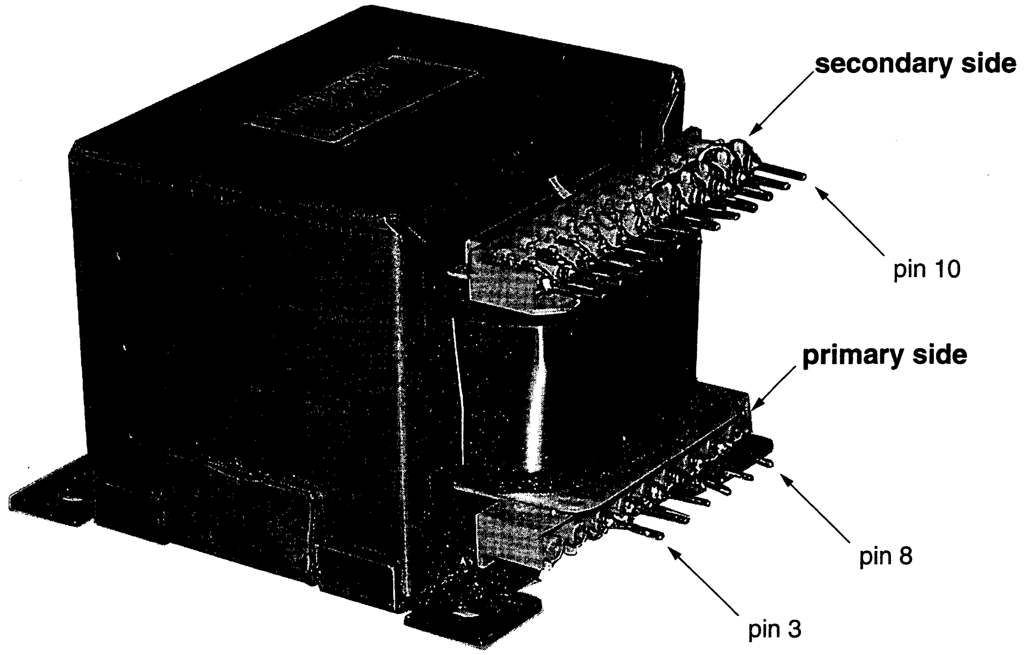
Technical remarks

WIRING DIAGRAM POWER5-VA MODULE


To AF Board
AB
PD
-30V
F2
F1
STBY
VCD ON
NTC
1263
FAN
+
-
To VCD Module
5,1V
GND
GND
+12M
1264
optional for VCD
To AF Board
5,6V
GNDD
+12M
GNDA
+12A
AMP ON
RIN
GND
LIN
1262
REL
MFD
+V
GND
1258
To DPL Board
S
GND
C
1922
Matrix Surround
OPTIONAL
16
8921
/3
1328
L
GND
R
optional for MatrixSurround Versions
Left / Right Amplifier
3
8322
/7
1325
1261
AB
DC
AMP OFF
L
GND
R
HST1
SAT
11
+VH
+VL
GNDL
GND
GNDR
-VL
-VH
1265
Supply part
F1
F2
NTC
GND
10
AC3
AC4
AC5
9
AC2
AC1
GND
AC1'
AC2'
8
14
/5
/5
/4
/3
/4
8326
8323
8324
8325
8903
1268
1928
SAT
HST2
AMP OFF
DC
+VL
+VL
GNDC
GND
GNDS
-VL
-VL
Center / Surround Amplifier
OPTIONAL

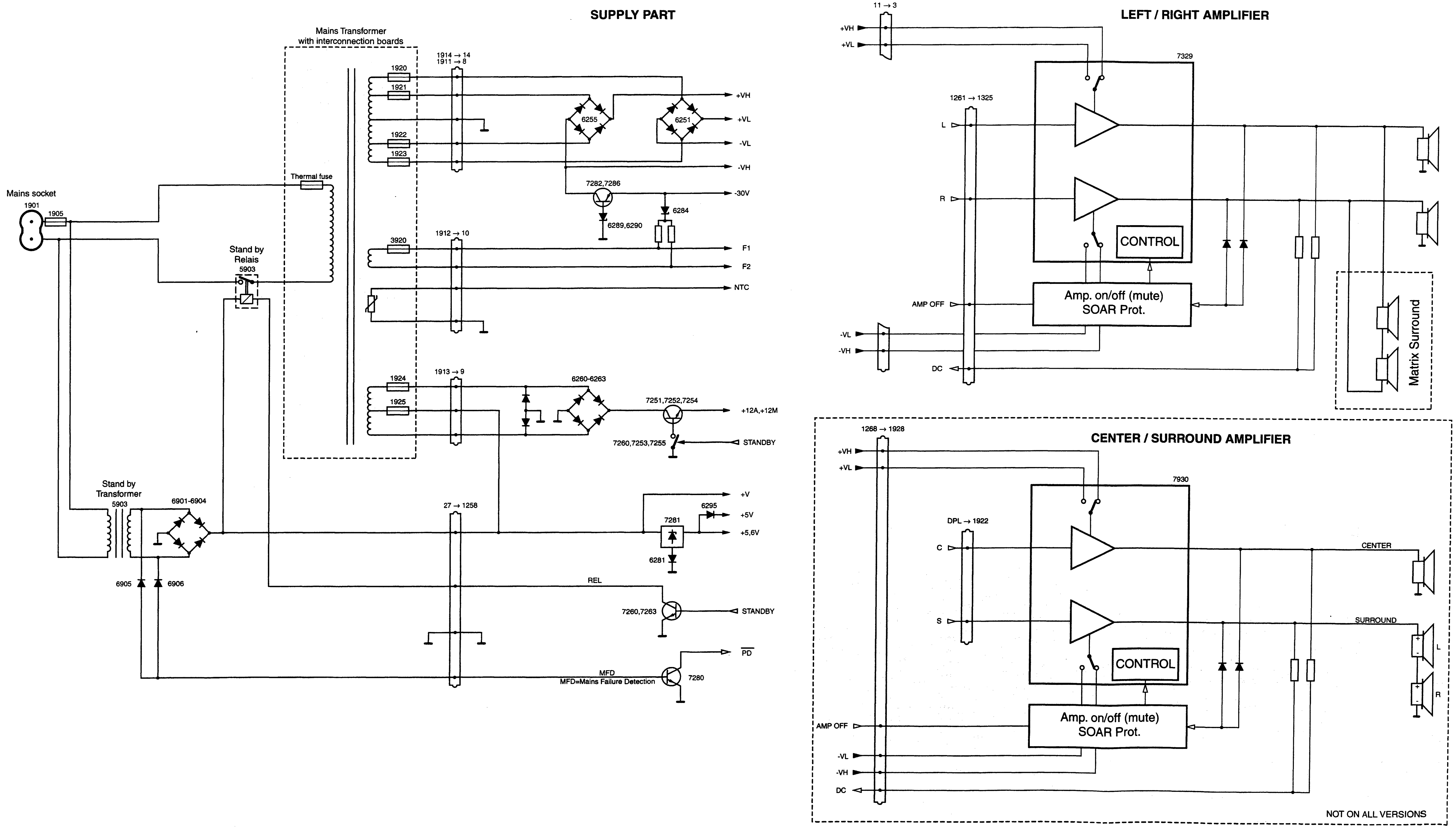

1911
1914
1912
1913
secondary
Interconnection Board
Mains transformer
primary
Interconnection Board
/2
/4
8901
8902
1910
Transformer Pin 3
Pin 4
1909
Transformer Pin 5
Pin 6
Pin 7
Pin 8
for /21 only
27
REL
MFD
+V
GND
Mains part
1901
Mains socket

Mains Transformer /21


secondary side
pin 10
primary side
pin 8
pin 3

Power5 VA Wiring Diagram 22 01 1999

BLOCK DIAGRAM 120/130W VERSION

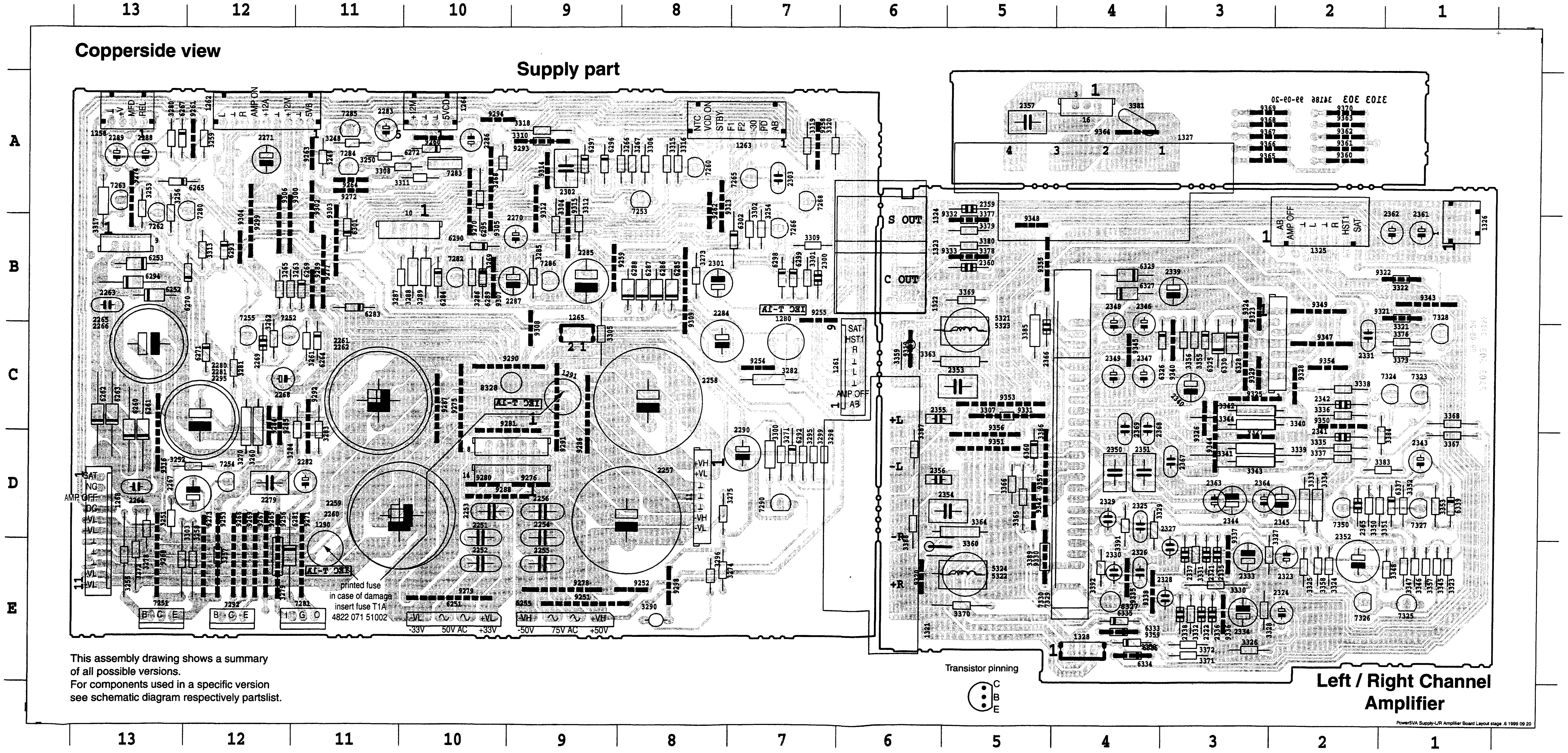

SUPPLY PART
Mains Transformer
with interconnection boards
Mains socket
1901
1905
Thermal fuse
Stand by
Relais
5903
1920
1921
1922
1923
1914 → 14
1911 → 8
6255
6251
+VH
+VL
-VL
-VH
7282,7286
-30V
6284
6289,6290
3920
1912 → 10
F1
F2
NTC
1924
1925
1913 → 9
6260-6263
7251,7252,7254
+12A,+12M
7260,7253,7255
STANDBY
Stand by
Transformer
5903
6901-6904
27 → 1258
+V
6295
+5V
7281
+5,6V
6281
6905
6906
REL
7260,7263
STANDBY
PD
MFD
MFD=Mains Failure Detection
7280
LEFT / RIGHT AMPLIFIER
11 → 3
+VH
+VL
7329
1261 → 1325
L
R
CONTROL
AMP OFF
Amp. on/off (mute)
SOAR Prot.
-VL
-VH
DC
Matrix Surround
CENTER / SURROUND AMPLIFIER
1268 → 1928
+VH
+VL
7930
DPL → 1922
C
S
CENTER
SURROUND
L
R
CONTROL
AMP OFF
Amp. on/off (mute)
SOAR Prot.
-VL
-VH
DC
NOT ON ALL VERSIONS

COMPONENT LAYOUT SUPPLY PART & L/R AMPLIFIER PART

9360	A	2
9361	A	2
9362	A	2
9363	A	2
9364	A	4
9365	A	3
9366	A	3
9367	A	3
9368	A	3
9369	A	3
9370	A	2
9314	A	9
9315	B	9
9316	D	13
T256	C	13
T257	C	12
T258	D	13
T265	B	10
T305	A	11
T312	A	7
T314	A	10
T315	B	9
T316	A	10

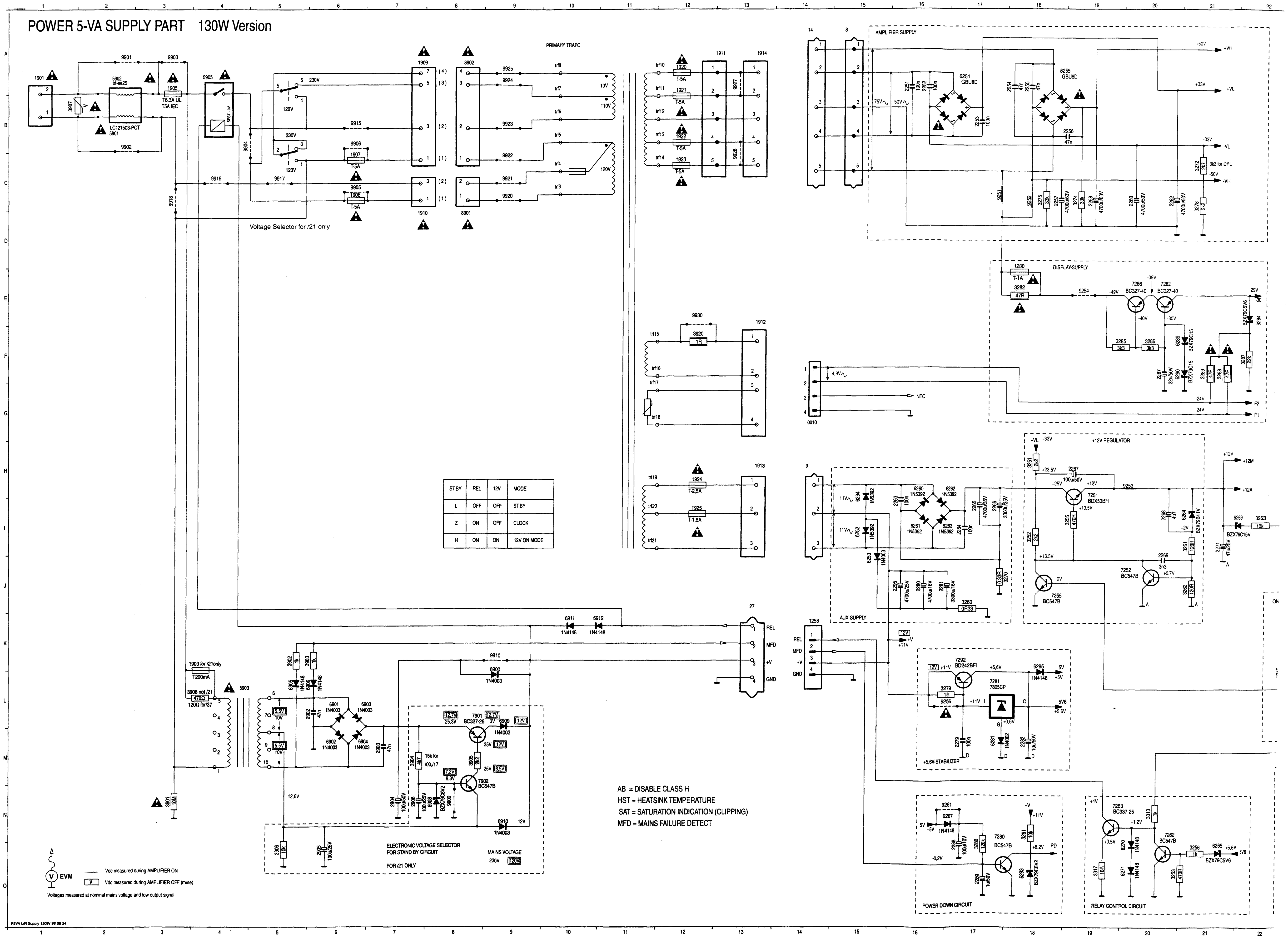
16	A	4
1327	A	4
2357	A	5
3381	A	4
9291	C	9
9292	C	11
9293	A	9
9294	A	10
9298	E	8
9299	B	12
9300	B	12
9302	A	11
9303	B	11
9304	B	12
9305	A	10
9306	B	12
9307	B	10
9308	C	9
9309	B	8
9312	A	9
9313	A	8
9272	A	11
9273	E	12
9274	A	13
9275	C	10
9276	D	9
9277	B	11
9278	E	9
9279	E	10
9280	D	10
9281	D	10
9284	C	12
9285	C	12
9286	C	9
9287	C	10
9288	D	10
9289	B	11
9290	C	10
9254	C	7
9255	B	7
9256	E	12
9258	A	7
9259	B	9
9260	A	10
9261	A	12
9262	A	8
9263	A	11
9264	A	11
9265	E	12
9266	E	12
9267	E	12
9268	E	13
9269	E	12
9270	A	10
9271	E	11
7263	A	13
7265	A	7
7266	B	7
7268	A	7
7280	A	12
7281	E	11
7282	B	10
7283	A	10
7284	A	11
7285	A	11
7286	B	9
7290	D	7
7292	E	12
8328	C	9
9251	E	9
9252	E	8
9253	E	12
6292	D	7
6293	B	12
6294	B	13
6295	A	10
6296	A	9
6297	A	9
6298	B	7
6299	B	7
6301	B	11
6302	B	7
7251	E	13
7252	C	12
7253	A	8
7254	D	12
7255	C	12
7260	A	8
7262	B	13
6263	C	13
6264	C	11
6265	A	13
6267	A	13
6269	B	11
6270	B	12
6271	C	12
6272	A	10
6281	E	12
6283	B	11
6284	B	10
6285	B	8
6286	B	8
6287	B	8
6288	B	8
6289	B	10
6290	B	10
3310	A	9
3311	A	10
3312	B	9
3313	B	12
3315	A	8
3316	A	8
3317	A	13
3318	A	9
3319	A	7
3320	A	7
6251	E	10
6252	B	13
6253	B	13
6255	E	9
6260	D	13
6261	D	13
6262	C	13
3287	B	11
3288	B	10
3289	B	10
3290	E	8
3295	D	7
3296	E	8
3298	D	7
3299	D	7
3300	D	7
3301	B	7
3302	B	7
3303	E	13
3304	B	9
3305	C	9
3306	A	8
3308	A	10
3309	B	7
3268	A	10
3269	B	10
3270	C	12
3271	D	7
3272	E	13
3273	B	8
3274	E	8
3275	D	8
3278	D	13
3279	E	12
3280	A	13
3281	C	12
3282	C	7
3283	D	11
3284	D	11
3285	B	9
3286	B	10
3250	A	11
3251	D	13
3252	D	12
3253	A	13
3254	B	7
3255	E	13
3256	B	13
3257	E	12
3258	E	12
3259	A	12
3260	C	12
3261	C	11
3262	C	12
3263	B	12
3265	B	12
3266	A	8
3267	A	8
2281	C	12
2282	D	11
2283	A	11
2284	C	8
2285	B	9
2286	A	10
2287	B	9
2288	A	13
2289	A	13
2290	D	7
2295	C	12
2300	B	7
2301	B	8
2302	A	9
2303	A	7
3248	A	11
3249	A	11
2257	D	8
2258	C	8
2259	D	10
2260	D	11
2261	C	11
2262	C	11
2263	B	13
2264	D	13
2265	C	13
2266	C	13
2267	D	12
2268	C	12
2269	C	12
2270	B	9
2271	A	12
2279	D	12
2280	C	12
14	D	9
1258	A	13
1261	C	6
1262	A	12
1263	A	7
1264	A	10
1265	C	9
1268	D	13
1280	C	7
1290	E	11
1291	C	9
2251	D	10
2252	E	10
2253	D	10
2254	D	9
2255	E	9
2256	D	9
9348	B	5
9349	B	2
9350	C	2
9351	D	5
9353	C	5
9354	C	2
9355	B	5
9356	D	5
9357	D	5
9358	E	4
9359	E	4
T321	A	1

8	D	9
9	B	13
10	B	10
11	D	8
9327	D	3
9328	C	2
9329	C	3
9330	E	5
9331	C	5
9332	B	5
9333	B	5
9335	E	4
9336	E	3
9337	E	3
9338	E	4
9340	C	3
9342	D	5
9343	B	1
9344	D	3
9345	C	4
9347	C	2
7324	C	1
7325	E	1
7326	E	2
7327	D	1
7328	C	1
7329	D	4
7330	C	4
7350	D	2
8327	E	4
9319	C	6
9320	E	6
9321	B	1
9322	B	1
9323	B	3
9324	C	3
9325	C	3
9326	C	3
5322	E	5
5323	C	5
5324	E	5
6325	C	3
6326	C	4
6327	B	4
6328	C	3
6329	B	4
6330	C	3
6333	E	4
6334	E	4
6335	E	4
6336	E	4
6337	D	1
6339	D	1
6360	D	5
7323	C	1
3372	E	3
3373	C	1
3376	C	1
3377	B	5
3378	B	5
3379	B	5
3380	B	5
3383	D	1
3384	D	1
3385	C	5
3386	D	5
3387	D	6
3388	D	6
3389	E	5
3391	D	4
3392	E	4
5321	C	5
3352	D	1
3353	D	1
3355	C	3
3356	C	3
3357	E	1
3358	E	2
3359	C	6
3360	E	6
3363	C	5
3364	D	5
3365	D	5
3366	D	5
3367	D	1
3368	C	1
3369	B	5
3370	E	5
3371	E	3
3334	D	2
3335	D	2
3336	C	2
3337	D	2
3338	C	2
3339	D	2
3340	C	2
3341	D	3
3342	C	3
3343	D	3
3344	C	3
3345	E	1
3346	E	1
3347	E	1
3348	E	1
3350	D	2
3351	D	2
2367	D	3
2368	C	4
2369	C	4
3307	C	5
3321	B	1
3322	B	1
3323	E	1
3324	E	2
3325	E	2
3326	E	3
3327	E	3
3328	E	3
3329	D	4
3330	E	3
3331	E	3
3332	E	3
3333	D	2
2348	C	4
2349	C	4
2350	D	4
2351	D	4
2352	E	2
2353	C	5
2354	D	5
2355	C	6
2356	D	6
2359	A	5
2360	B	5
2361	B	1
2362	B	1
2363	D	3
2364	D	3
2365	D	2
2366	C	5
2330	E	4
2331	C	2
2333	E	3
2334	E	3
2335	E	3
2336	E	3
2337	E	3
2338	E	3
2339	B	3
2340	C	3
2341	D	2
2342	C	2
2343	D	1
2344	D	3
2345	D	2
2346	C	4
2347	C	4
3	C	2
1321	D	6
1322	B	6
1323	B	6
1324	B	6
1325	B	2
1326	B	1
1328	E	4
2321	E	3
2322	E	3
2323	E	2
2324	E	2
2325	D	4
2326	E	4
2327	E	3
2328	E	3
2329	D	4



This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

POWER 5-VA SUPPLY PART 130W Version


PRIMARY TRAFO
Voltage Selector for /21 only
AMPLIFIER SUPPLY
DISPLAY-SUPPLY
+12V REGULATOR
AUX-SUPPLY
+5,6V-STABILIZER
POWER DOWN CIRCUIT
RELAY CONTROL CIRCUIT
ELECTRONIC VOLTAGE SELECTOR FOR STAND BY CIRCUIT
FOR /21 ONLY
MAINS VOLTAGE 230V 120V
LC121503-PCT 5901
T6.3A UL T5A IEC
6251 GBU8D
6255 GBU8D
7251 BDX53BFI
7292 BD242BFI
7281 7805CP
7901 BC327-25
7902 BC547B
+VH
+VL
-VL
-VH
+12M
+12A
REL
MFD
+V
GND
NTC
F1
F2
PD

ST.BY	REL	12V	MODE
L	OFF	OFF	ST.BY
Z	ON	OFF	CLOCK
H	ON	ON	12V ON MODE

AB = DISABLE CLASS H
HST = HEATSINK TEMPERATURE
SAT = SATURATION INDICATION (CLIPPING)
MFD = MAINS FAILURE DETECT

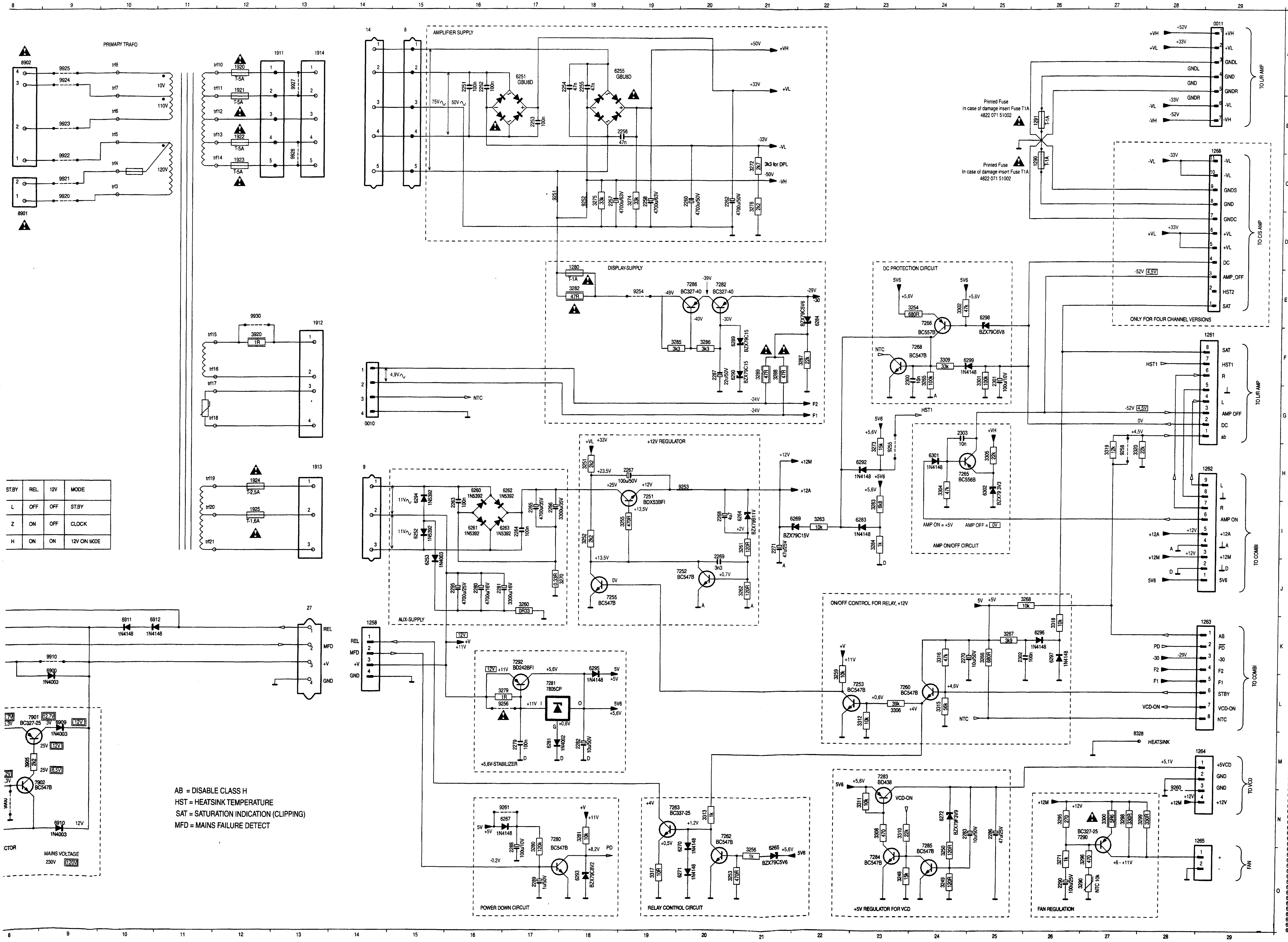
EVM

.... Vdc measured during AMPLIFIER ON

V Vdc measured during AMPLIFIER OFF (mute)

Voltages measured at nominal mains voltage and low output signal

PSVA L/R Supply 130W 99 09 24


PRIMARY TRAFO
AMPLIFIER SUPPLY
DISPLAY-SUPPLY
+12V REGULATOR
AUX-SUPPLY
+5,6V-STABILIZER
POWER DOWN CIRCUIT
RELAY CONTROL CIRCUIT
+5V REGULATOR FOR VCD
FAN REGULATION
DC PROTECTION CIRCUIT
AMP ON/OFF CIRCUIT
ON/OFF CONTROL FOR RELAY, +12V
ONLY FOR FOUR CHANNEL VERSIONS
TO L/R AMP
TO C/S AMP
TO COMBI
TO VCD
FAN
HEATSINK
MAINS VOLTAGE
230V
3k3 for DPL
Printed Fuse
In case of damage insert Fuse T1A
4822 071 51002
AMP ON = +5V
AMP OFF = 0V

ST.BY	REL	12V	MODE
L	OFF	OFF	ST.BY
Z	ON	OFF	CLOCK
H	ON	ON	12V ON MODE

AB = DISABLE CLASS H
HST = HEATSINK TEMPERATURE
SAT = SATURATION INDICATION (CLIPPING)
MFD = MAINS FAILURE DETECT

0010	G14
0011	B29
1258	K14
1261	F29
1262	H29
1263	M29
1264	M29
1265	N29
1268	B29
1280	E18
1290	C26
1291	B26
14	A14
1901	A 1
1903	J15
1905	A 3
1906	C 6
1907	C 6
1909	A 7
1910	D 7
1911	A13
1912	E13
1913	H13
1914	A13
1920	A12
1921	A12
1922	B12
1923	C12
1924	H12
1925	I12
2251	A16
2252	A16
2253	B17
2254	A18
2255	A18
2256	B19
2257	C18
2258	C19
2260	C20
2262	C20
2263	I16
2264	I17
2265	I17
2266	I17
2267	H19
2268	I20
2269	J20
2270	K24
2271	I21
2279	M17
2280	J16
2281	J16
2282	M18
2283	N24
2286	N25
2287	F20
2288	O17
2289	O17
2290	O26
2295	J16
2300	F23
2301	F25
2302	K25
2303	G24
27	J13
2902	L 6
2903	M 7
2904	N 7
2905	N 6
2906	N 7
3248	O23
3249	O24
3250	O24
3251	H18
3252	I18
3253	O20
3254	E24
3255	I19
3256	O21
3259	L22
3260	J17
3261	I21
3262	J21
3263	I22
3265	F24
3266	K25
3267	K25
3268	J26
3269	F21
3270	J18
3271	O26
3272	C21
3273	H23
3274	C19
3275	C18
3278	C21
3279	L17
3280	O17
3281	N18
3282	E18
3283	I23
3284	I23
3285	F19
3286	F20
3287	F22
3288	F21
3289	F21
3290	O26
3295	N26
3296	O27
3298	N27
3299	N28
3300	N27
3301	F25
3302	E24
3304	H24
3305	H25
3306	L23
3308	N23
3309	F24
3310	N23
3311	N23
3312	L23
3313	N20
3315	L24
3316	K24
3317	O19
3318	K26
3319	H27
3320	H27
3901	N 3
3902	K 5
3903	K 6
3904	M 7
3905	M 8
3906	N 5
3907	B 1
3908	L 4
3920	F12
5901	B 2
5902	A 2
5903	L 4
5905	A 4
6251	A17
6252	I15
6253	J15
6255	A18
6260	H16
6261	I16
6262	H17
6263	I17
6264	I20
6265	N21
6267	N17
6269	I22
6270	O19
6271	O19
6272	N24
6281	M17
6283	I23
6284	E22
6289	F21
6290	F20
6292	H23
6293	O18
6294	H15
6295	K18
6296	K26
6297	K26
6298	E25
6299	F24
6301	H24
6302	H25
6900	K 9
6901	L 6
6902	M 6
6903	L 7
6904	M 6
6905	L 5
6906	L 5
6908	N 8
6909	L 9
6910	N 9
6911	K10
6912	K11
7251	H19
7252	J20
7253	L23
7255	J18
7260	L24
7262	N20
7263	N20
7265	H24
7266	E24
7268	F24
7280	N17
7281	L17
7282	E20
7283	M23
7284	O23
7285	O24
7286	E20
7290	N26
7292	K17
7901	L 8
7902	M 8
8	A15
8901	D 8
8902	A 8
9	H14
9251	C17
9252	C18
9253	H20
9254	E19
9255	H23
9256	L17
9258	H27
9260	N28
9261	N17
9276	A16
9280	C16
9900	N 8
9901	A 2
9902	B 2
9903	A 3
9904	B 4
9905	C 6
9906	B 6
9910	K 9
9911	F 1
9912	G 1
9913	G 1
9914	G 1
9915	B 6
9916	C 4
9917	C 5
9918	C 3
9920	C 9
9921	C 9
9922	C 9
9923	B 9
9924	A 9
9925	A 9
9927	A13
9928	C13
9930	E12
trf10	A11
trf11	A11
trf12	B11
trf13	B11
trf14	C11
trf15	F12
trf16	F11
trf17	G12
trf18	G11
trf19	H11
trf20	I11
trf21	I11
trf3	C10
trf4	C10
trf5	B10
trf6	B10
trf7	A10
trf8	A10

COMPONENT LAYOUT MAINS BOARD

Interconnection Board

primary side

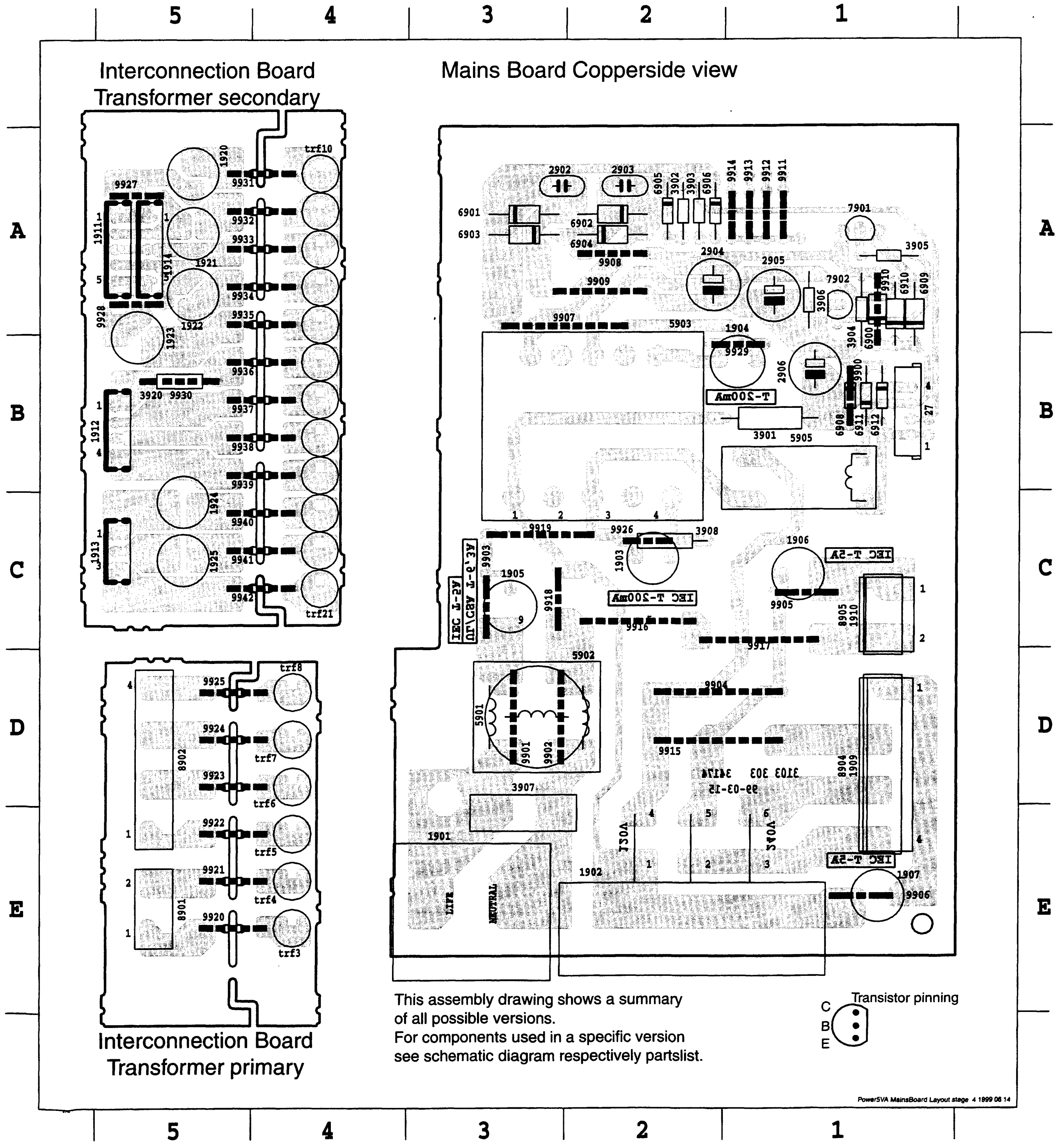
8901 E 5
8902 D 5
9920 E 4
9921 E 4
9922 E 4
9923 D 4
9924 D 4
9925 D 4
trf3 E 4
trf4 E 4
trf5 E 4
trf6 D 4
trf7 D 4
trf8 D 4

secondary side

1911 A 5
1912 B 5
1913 C 5
1914 A 5
1920 A 4
1921 A 4
1922 A 4
1923 B 5
1924 C 4
1925 C 4
3920 B 4
9927 A 5
9928 A 5
9930 B 4
9931 A 4
9932 A 4
9933 A 4
9934 A 4
9935 B 4
9936 B 4
9937 B 4
9938 B 4
9939 C 4
9940 C 4
9941 C 4
9942 C 4
trf10 A 3
trf11 A 3
trf12 A 3
trf13 A 3
trf14 B 3
trf15 B 3
trf16 B 3
trf17 B 3
trf18 C 3
trf19 C 3
trf20 C 3
trf21 C 3

Mains Board

27 B 1
1901 E 3
1902 E 2
1903 C 2
1904 B 2
1905 C 3
1906 C 1
1907 E 1
1909 D 1
1910 C 1
2902 A 3
2903 A 2
2904 A 2
2905 A 1
2906 B 1
3901 B 1
3902 A 2
3903 A 2
3904 B 1
3905 A 1
3906 A 1
3907 E 3
3908 C 2
5901 D 3
5902 D 3
5903 B 2
5905 C 1
6900 B 1
6901 A 3
6902 A 2
6903 A 3
6904 A 2
6905 A 2
6906 A 2
6908 B 1
6909 B 1
6910 B 1
6911 B 1
6912 B 1
7901 A 1
7902 B 1
8904 D 1
8905 C 1
9900 B 1
9901 D 3
9902 D 3
9903 C 3
9904 D 2
9905 C 1
9906 E 1
9907 B 3
9908 A 2
9909 A 2
9910 B 1
9911 A 1
9912 A 1
9913 A 2
9914 A 2
9915 D 2
9916 D 2
9917 D 1
9918 C 3
9919 C 3
9926 C 2
9929 B 2



This assembly drawing shows a summary
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For components used in a specific version
see schematic diagram respectively partslist.

COMPONENT LAYOUT SUPPLY PART & L/R AMPLIFIER PART

9360 A 2
9361 A 2
9362 A 2
9363 A 2
9364 A 4
9365 A 3
9366 A 3
9367 A 3
9368 A 3
9369 A 3
9370 A 2

9314 A 9
9315 B 9
9316 D 13
T256 C 13
T257 C 12
T258 D 13
T265 B 10
T305 A 11
T312 A 7
T314 A 10
T315 B 9
T316 A 10
----
16 A 4
1327 A 4
2357 A 5
3381 A 4

9291 C 9
9292 C 11
9293 A 9
9294 A 10
9298 E 8
9299 B 12
9300 B 12
9302 A 11
9303 B 11
9304 B 12
9305 A 10
9306 B 12
9307 B 10
9308 C 9
9309 B 8
9312 A 9
9313 A 8

9272 A 11
9273 E 12
9274 A 13
9275 C 10
9276 D 9
9277 B 11
9278 E 9
9279 E 10
9280 D 10
9281 D 10
9284 C 12
9285 C 12
9286 C 9
9287 C 10
9288 D 10
9289 B 11
9290 C 10

9254 C 7
9255 B 7
9256 E 12
9258 A 7
9259 B 9
9260 A 10
9261 A 12
9262 A 8
9263 A 11
9264 A 11
9265 E 12
9266 E 12
9267 E 12
9268 E 13
9269 E 12
9270 A 10
9271 E 11

7263 A 13
7265 A 7
7266 B 7
7268 A 7
7280 A 12
7281 E 11
7282 B 10
7283 A 10
7284 A 11
7285 A 11
7286 B 9
7290 D 7
7292 E 12
8328 C 9
9251 E 9
9252 E 8
9253 E 12

6292 D 7
6293 B 12
6294 B 13
6295 A 10
6296 A 9
6297 A 9
6298 B 7
6299 B 7
6301 B 11
6302 B 7
7251 E 13
7252 C 12
7253 A 8
7254 D 12
7255 C 12
7260 A 8
7262 B 13

6263 C 13
6264 C 11
6265 A 13
6267 A 13
6269 B 11
6270 B 12
6271 C 12
6272 A 10
6281 E 12
6283 B 11
6284 B 10
6285 B 8
6286 B 8
6287 B 8
6288 B 8
6289 B 10
6290 B 10

3310 A 9
3311 A 10
3312 B 9
3313 B 12
3315 A 8
3316 A 8
3317 A 13
3318 A 9
3319 A 7
3320 A 7
6251 E 10
6252 B 13
6253 B 13
6255 E 9
6260 D 13
6261 D 13
6262 C 13

3287 B 11
3288 B 10
3289 B 10
3290 E 8
3295 D 7
3296 E 8
3298 D 7
3299 D 7
3300 D 7
3301 B 7
3302 B 7
3303 E 13
3304 B 9
3305 C 9
3306 A 8
3308 A 10
3309 B 7

3268 A 10
3269 B 10
3270 C 12
3271 D 7
3272 E 13
3273 B 8
3274 E 8
3275 D 8
3278 D 13
3279 E 12
3280 A 13
3281 C 12
3282 C 7
3283 D 11
3284 D 11
3285 B 9
3286 B 10

3250 A 11
3251 D 13
3252 D 12
3253 A 13
3254 B 7
3255 E 13
3256 B 13
3257 E 12
3258 E 12
3259 A 12
3260 C 12
3261 C 11
3262 C 12
3263 B 12
3265 B 12
3266 A 8
3267 A 8

2281 C 12
2282 D 11
2283 A 11
2284 C 8
2285 B 9
2286 A 10
2287 B 9
2288 A 13
2289 A 13
2290 D 7
2295 C 12
2300 B 7
2301 B 8
2302 A 9
2303 A 7
3248 A 11
3249 A 11

2257 D 8
2258 C 8
2259 D 10
2260 D 11
2261 C 11
2262 C 11
2263 B 13
2264 D 13
2265 C 13
2266 C 13
2267 D 12
2268 C 12
2269 C 12
2270 B 9
2271 A 12
2279 D 12
2280 C 12

14 D
1258 A
1261 C
1262 A
1263 A
1264 A
1265 C
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1280 C
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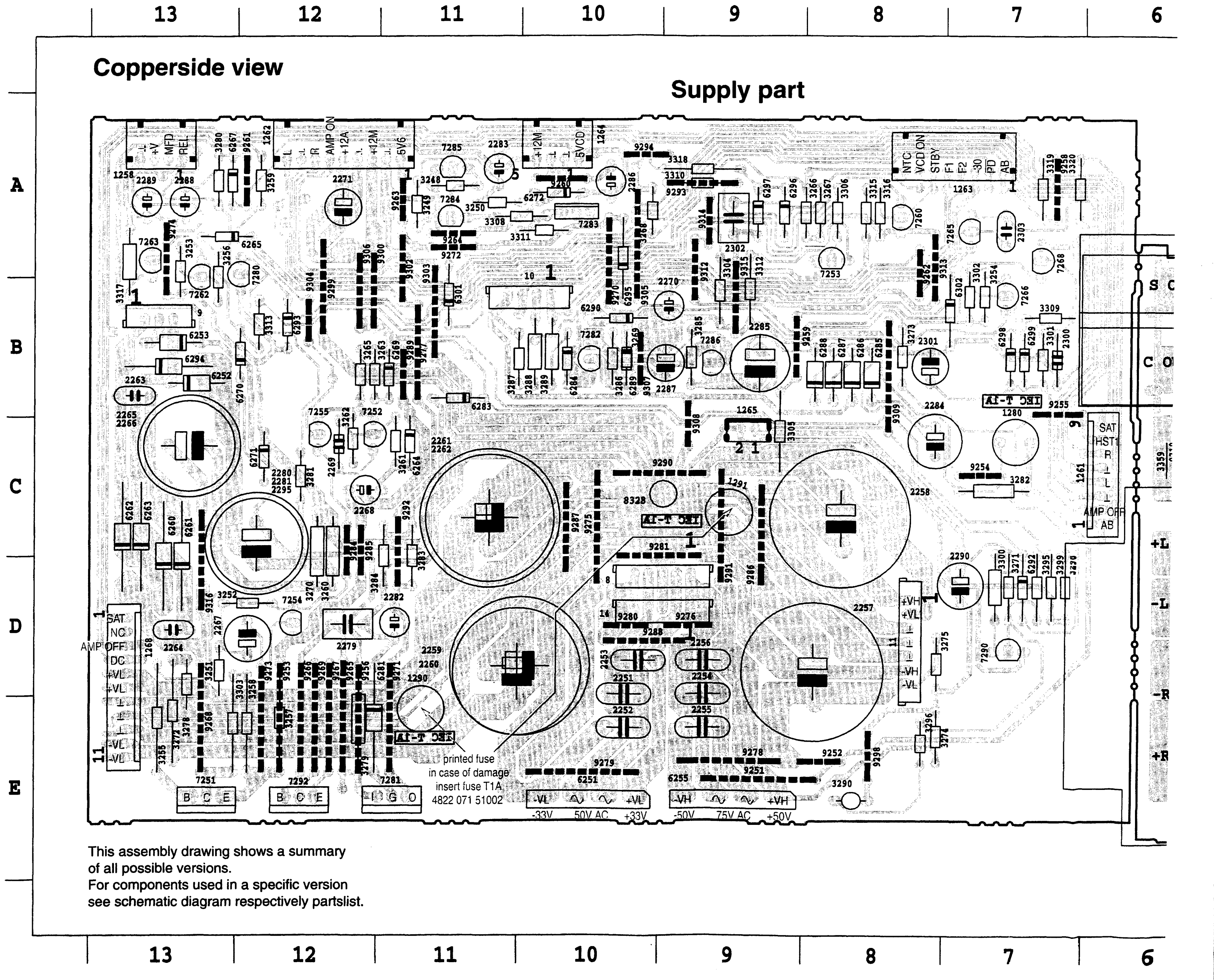
1291 C
2251 D
2252 E
2253 D
2254 D
2255 E
2256 D



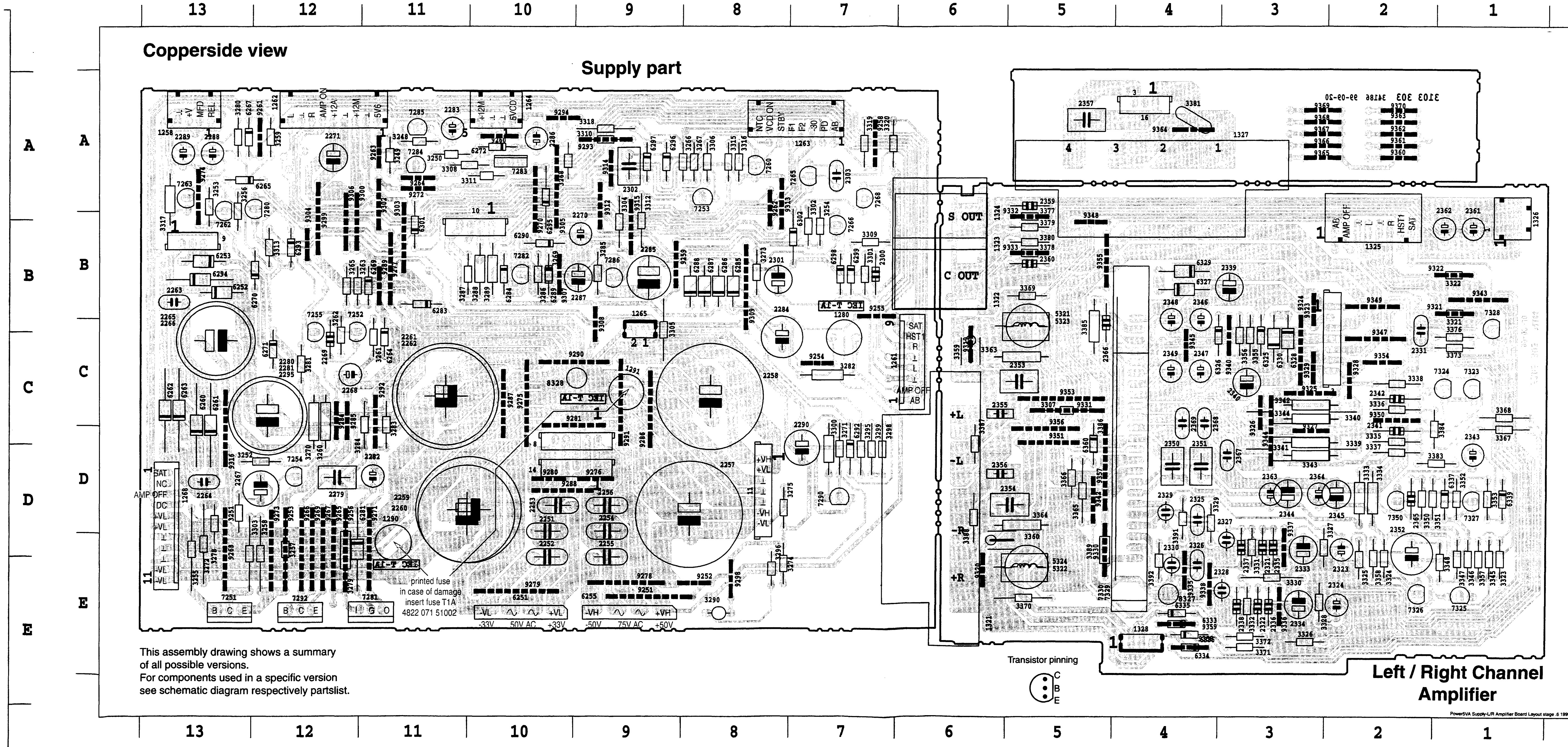
This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

COMPONENT LAYOUT SUPPLY PART & L/R AMPLIFIER PART

9360	A	2
9361	A	2
9362	A	2
9363	A	2
9364	A	4
9365	A	3
9366	A	3
9367	A	3
9368	A	3
9369	A	3
9370	A	2
9314	A	9
9315	B	9
9316	D	13
T256	C	13
T257	C	12
T258	D	13
T265	B	10
T305	A	11
T312	A	7
T314	A	10
T315	B	9
T316	A	10

16	A	4
1327	A	4
2357	A	5
3381	A	4
9291	C	9
9292	C	11
9293	A	9
9294	A	10
9298	E	8
9299	B	12
9300	B	12
9302	A	11
9303	B	11
9304	B	12
9305	A	10
9306	B	12
9307	B	10
9308	C	9
9309	B	8
9312	A	9
9313	A	8
9272	A	11
9273	E	12
9274	A	13
9275	C	10
9276	D	9
9277	B	11
9278	E	9
9279	E	10
9280	D	10
9281	D	10
9284	C	12
9285	C	12
9286	C	9
9287	C	10
9288	D	10
9289	B	11
9290	C	10
9254	C	7
9255	B	7
9256	E	12
9258	A	7
9259	B	9
9260	A	10
9261	A	12
9262	A	8
9263	A	11
9264	A	11
9265	E	12
9266	E	12
9267	E	12
9268	E	13
9269	E	12
9270	A	10
9271	E	11
7263	A	13
7265	A	7
7266	B	7
7268	A	7
7280	A	12
7281	E	11
7282	B	10
7283	A	10
7284	A	11
7285	A	11
7286	B	9
7290	D	7
7292	E	12
8328	C	9
9251	E	9
9252	E	8
9253	E	12
6292	D	7
6293	B	12
6294	B	13
6295	A	10
6296	A	9
6297	A	9
6298	B	7
6299	B	7
6301	B	11
6302	B	7
7251	E	13
7252	C	12
7253	A	8
7254	D	12
7255	C	12
7260	A	8
7262	B	13
6263	C	13
6264	C	11
6265	A	13
6267	A	13
6269	B	11
6270	B	12
6271	C	12
6272	A	10
6281	E	12
6283	B	11
6284	B	10
6285	B	8
6286	B	8
6287	B	8
6288	B	8
6289	B	10
6290	B	10
3310	A	9
3311	A	10
3312	B	9
3313	B	12
3315	A	8
3316	A	8
3317	A	13
3318	A	9
3319	A	7
3320	A	7
6251	E	10
6252	B	13
6253	B	13
6255	E	9
6260	D	13
6261	D	13
6262	C	13
3287	B	11
3288	B	10
3289	B	10
3290	E	8
3295	D	7
3296	E	8
3298	D	7
3299	D	7
3300	D	7
3301	B	7
3302	B	7
3303	E	13
3304	B	9
3305	C	9
3306	A	8
3308	A	10
3309	B	7
3268	A	10
3269	B	10
3270	C	12
3271	D	7
3272	E	13
3273	B	8
3274	E	8
3275	D	8
3278	D	13
3279	E	12
3280	A	13
3281	C	12
3282	C	7
3283	D	11
3284	D	11
3285	B	9
3286	B	10
3250	A	11
3251	D	13
3252	D	12
3253	A	13
3254	B	7
3255	E	13
3256	B	13
3257	E	12
3258	E	12
3259	A	12
3260	C	12
3261	C	11
3262	C	12
3263	B	12
3265	B	12
3266	A	8
3267	A	8
2281	C	12
2282	D	11
2283	A	11
2284	C	8
2285	B	9
2286	A	10
2287	B	9
2288	A	13
2289	A	13
2290	D	7
2295	C	12
2300	B	7
2301	B	8
2302	A	9
2303	A	7
3248	A	11
3249	A	11
2257	D	8
2258	C	8
2259	D	10
2260	D	11
2261	C	11
2262	C	11
2263	B	13
2264	D	13
2265	C	13
2266	C	13
2267	D	12
2268	C	12
2269	C	12
2270	B	9
2271	A	12
2279	D	12
2280	C	12
14	D	9
1258	A	13
1261	C	6
1262	A	12
1263	A	7
1264	A	10
1265	C	9
1268	D	13
1280	C	7
1290	E	11
1291	C	9
2251	D	10
2252	E	10
2253	D	10
2254	D	9
2255	E	9
2256	D	9
9348	B	5
9349	B	2
9350	C	2
9351	D	5
9353	C	5
9354	C	2
9355	B	5
9356	D	5
9357	D	5
9358	E	4
9359	E	4
T321	A	1

8	D	9
9	B	13
10	B	10
11	D	8
9327	D	3
9328	C	2
9329	C	3
9330	E	5
9331	C	5
9332	B	5
9333	B	5
9335	E	4
9336	E	3
9337	E	3
9338	E	4
9340	C	3
9342	D	5
9343	B	1
9344	D	3
9345	C	4
9347	C	2
7324	C	1
7325	E	1
7326	E	2
7327	D	1
7328	C	1
7329	D	4
7330	C	4
7350	D	2
8327	E	4
9319	C	6
9320	E	6
9321	B	1
9322	B	1
9323	B	3
9324	C	3
9325	C	3
9326	C	3
5322	E	5
5323	C	5
5324	E	5
6325	C	3
6326	C	4
6327	B	4
6328	C	3
6329	B	4
6330	C	3
6333	E	4
6334	E	4
6335	E	4
6336	E	4
6337	D	1
6339	D	1
6360	D	5
7323	C	1
3372	E	3
3373	C	1
3376	C	1
3377	B	5
3378	B	5
3379	B	5
3380	B	5
3383	D	1
3384	D	1
3385	C	5
3386	D	5
3387	D	6
3388	D	6
3389	E	5
3391	D	4
3392	E	4
5321	C	5
3352	D	1
3353	D	1
3355	C	3
3356	C	3
3357	E	1
3358	E	2
3359	C	6
3360	E	6
3363	C	5
3364	D	5
3365	D	5
3366	D	5
3367	D	1
3368	C	1
3369	B	5
3370	E	5
3371	E	3
3334	D	2
3335	D	2
3336	C	2
3337	D	2
3338	C	2
3339	D	2
3340	C	2
3341	D	3
3342	C	3
3343	D	3
3344	C	3
3345	E	1
3346	E	1
3347	E	1
3348	E	1
3350	D	2
3351	D	2
2367	D	3
2368	C	4
2369	C	4
3307	C	5
3321	B	1
3322	B	1
3323	E	1
3324	E	2
3325	E	2
3326	E	3
3327	E	3
3328	E	3
3329	D	4
3330	E	3
3331	E	3
3332	E	3
3333	D	2
2348	C	4
2349	C	4
2350	D	4
2351	D	4
2352	E	2
2353	C	5
2354	D	5
2355	C	6
2356	D	6
2359	A	5
2360	B	5
2361	B	1
2362	B	1
2363	D	3
2364	D	3
2365	D	2
2366	C	5
2330	E	4
2331	C	2
2333	E	3
2334	E	3
2335	E	3
2336	E	3
2337	E	3
2338	E	3
2339	B	3
2340	C	3
2341	D	2
2342	C	2
2343	D	1
2344	D	3
2345	D	2
2346	C	4
2347	C	4
3	C	2
1321	D	6
1322	B	6
1323	B	6
1324	B	6
1325	B	2
1326	B	1
1328	E	4
2321	E	3
2322	E	3
2323	E	2
2324	E	2
2325	D	4
2326	E	4
2327	E	3
2328	E	3
2329	D	4



This assembly drawing shows a summary
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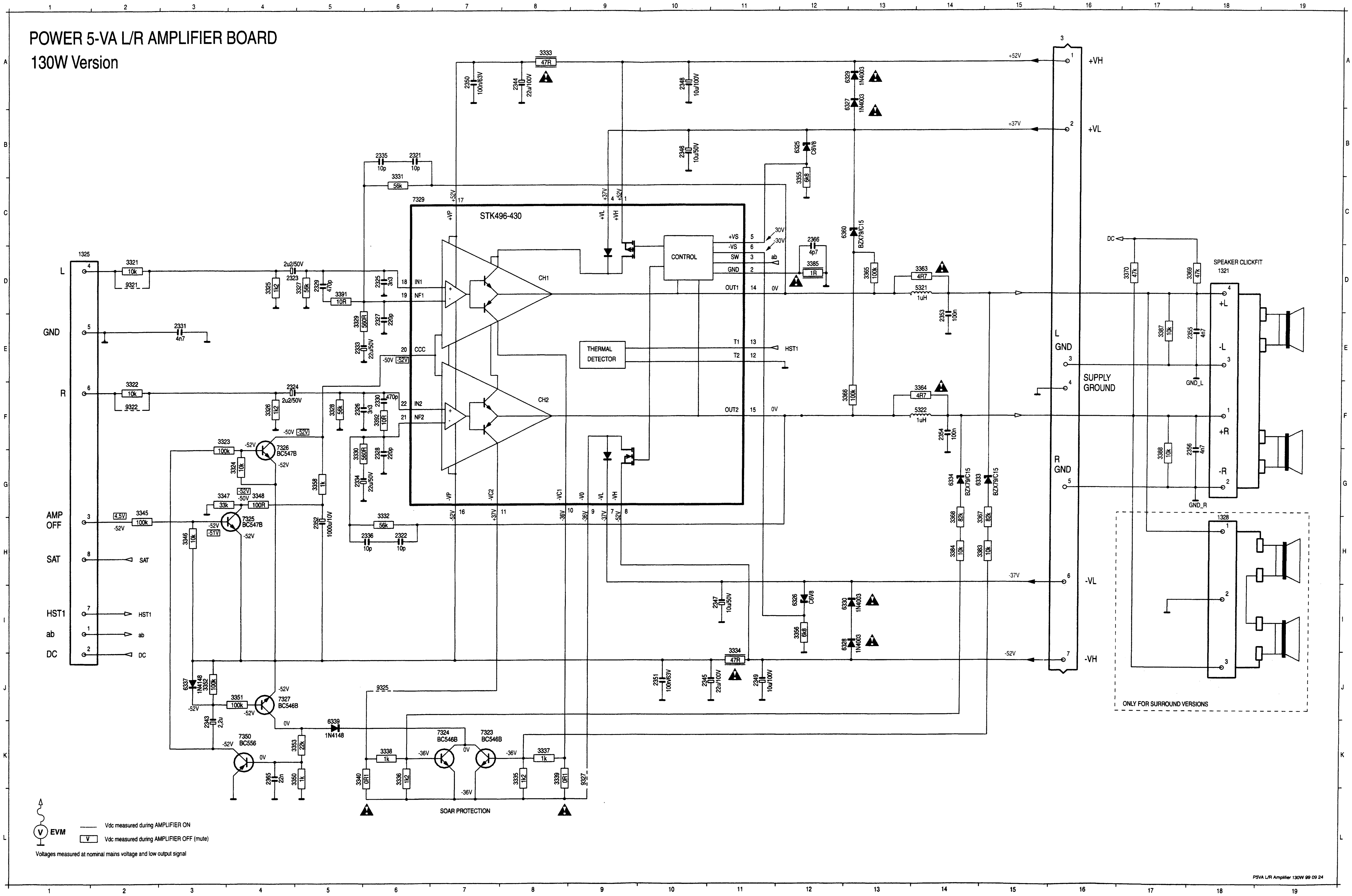
POWER 5-VA L/R AMPLIFIER BOARD
130W Version


STK496-430
7329
CONTROL
THERMAL DETECTOR
CH1
CH2
IN1
NF1
IN2
NF2
CCC
+VS
-VS
SW
GND
OUT1
OUT2
T1
T2
+VP
-VP
-VC2
-VC1
-V0
-VL
-VH
+VL
+VH
1325
L
GND
R
AMP OFF
SAT
HST1
ab
DC
3321 10k
9321
3322 10k
9322
2331 4n7
3345 100k
4.5V
-52V
2323 2u2/50V
2324 2u2/50V
3325 1k2
3326 1k2
3327 56k
3328 56k
2329 470p
2330 470p
3391 10R
3392 10R
2325 3n3
2326 3n3
3329 560R
3330 560R
2327 220p
2328 220p
2333 22u/50V
2334 22u/50V
2335 10p
2321 10p
3331 56k
3332 56k
2336 10p
2322 10p
3323 100k
3324 10k
7326 BC547B
3347 33k
3348 100R
7325 BC547B
3346 10k
3358 1k
2352 1000u/10V
2350 100n/63V
2344 22u/100V
3333 47R
2348 10u/100V
2346 10u/50V
6325 C6V8
3355 6k8
6329 1N4003
6327 1N4003
6360 BZX79/C15
2366 4p7
3385 1R
3365 100k
3366 100k
3363 4R7
3364 4R7
5321 1uH
5322 1uH
2353 100n
2354 100n
6334 BZX79/C15
6333 BZX79/C15
3368 82k
3367 82k
3384 10k
3383 10k
2347 10u/50V
6326 C6V8
3356 6k8
6330 1N4003
6328 1N4003
3334 47R
2351 100n/63V
2345 22u/100V
2349 10u/100V
6337 1N4148
3352 100k
3351 100k
7327 BC546B
2343 2.2u
7350 BC556
2365 22n
3353 22k
3350 1k
6339 1N4148
9325
3338 1k
3340 0R1
3336 1k2
7324 BC546B
7323 BC546B
3337 1k
3335 1k2
3339 0R1
9327
SOAR PROTECTION
+52V
+37V
-37V
-52V
-50V
-51V
-36V
0V
30V
-30V
+VH
+VL
-VL
-VH
L GND
R GND
SUPPLY GROUND
DC
3370 47k
3369 47k
SPEAKER CLICKFIT
1321
3387 10k
3388 10k
2355 4n7
2356 4n7
GND_L
GND_R
+L
-L
+R
-R
1328
ONLY FOR SURROUND VERSIONS
EVM
P5VA L/R Amplifier 130W 99 09 24

Vdc measured during AMPLIFIER ON

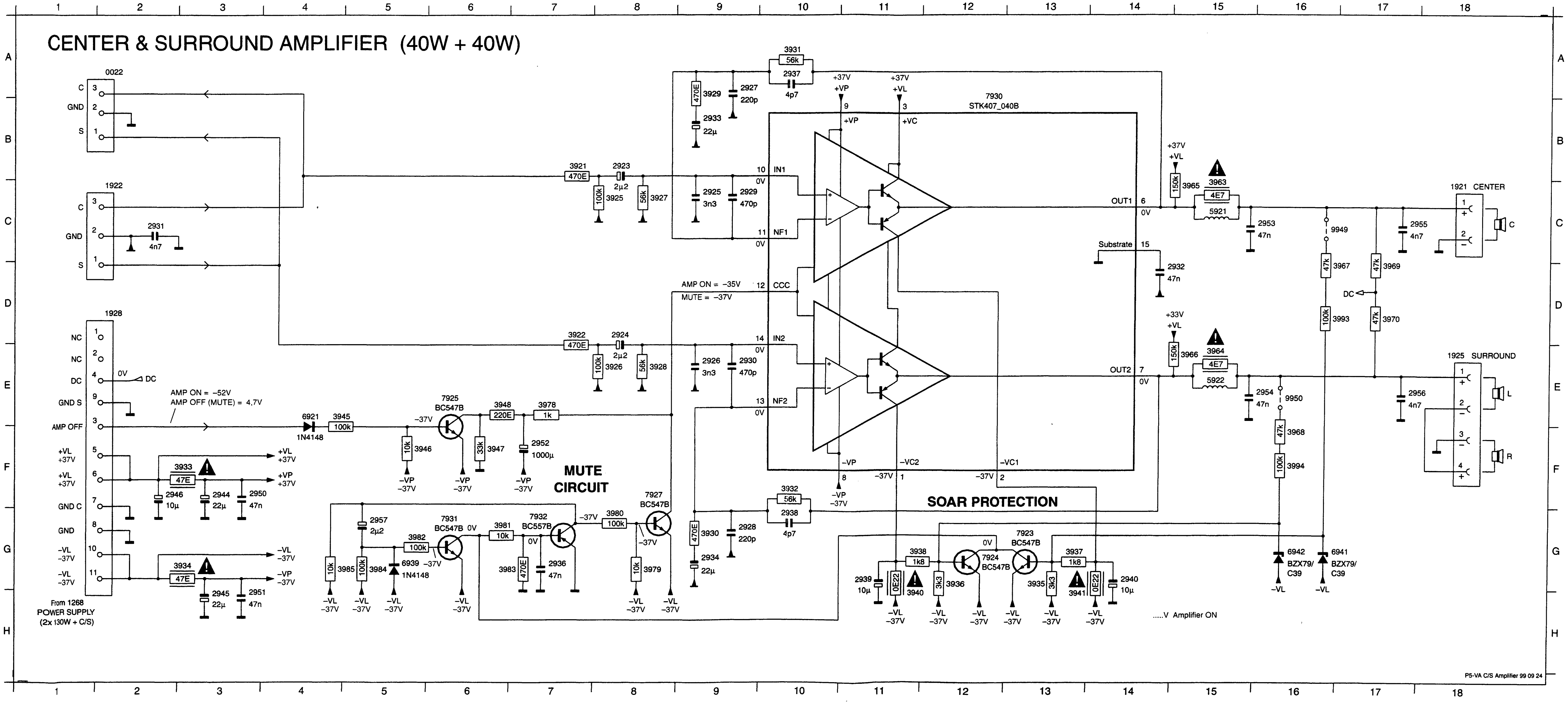
Vdc measured during AMPLIFIER OFF (mute)

Voltages measured at nominal mains voltage and low output signal

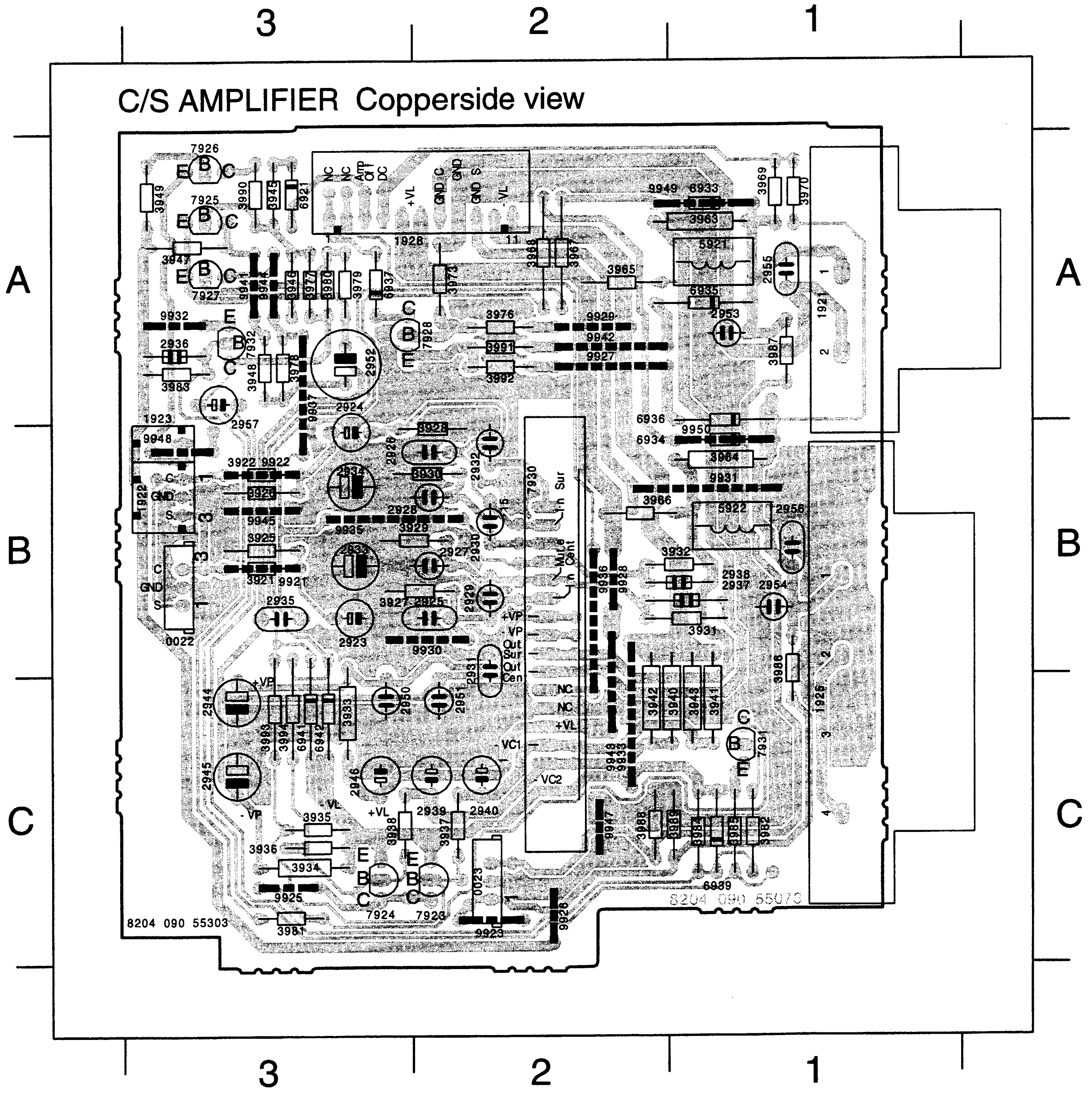
1321	D18
1325	D 1
1328	G18
2321	B 6
2322	H 6
2323	D 4
2324	F 4
2325	D 5
2326	F 5
2327	E 6
2328	G 6
2329	D 6
2330	F 6
2331	E 3
2333	E 5
2334	G 5
2335	B 6
2336	H 6
2337	B 6
2338	H 6
2341	K 7
2342	K 6
2343	K 3
2344	A 8
2345	J10
2346	B10
2347	I11
2348	A10
2349	J11
2350	A 7
2351	J10
2352	H 5
2353	E14
2354	F14
2355	E18
2356	G18
2363	A 7
2364	J10
2365	K 4
2366	C12
2367	B8
2368	I8
2369	I9
3	A16
3321	D 2
3322	F 2
3323	F 3
3324	G 4
3325	D 4
3326	F 4
3327	D 5
3328	F 5
3329	E 5
3330	G 5
3331	C 6
3332	H 6
3333	A 8
3334	J11
3335	K 8
3336	K 6
3337	K 8
3338	K 6
3339	K 8
3340	K 5
3345	G 2
3346	H 3
3347	G 3
3348	G 4
3350	K 5
3351	J 4
3352	J 3
3353	K 5
3355	C12
3356	I12
3358	G 5
3363	D14
3364	E14
3365	D13
3366	F13
3367	H15
3368	H14
3369	D18
3370	D17
3383	H15
3384	H14
3385	D12
3386	C13
3387	E17
3388	G17
3389	F13
5321	D14
5322	F14
5323	D14
5324	F14
6325	B12
6326	I12
6327	A13
6328	I13
6329	A13
6330	I13
6333	G14
6334	G14
6337	J 3
6339	K 5
6360	C12
7323	K 7
7324	K 7
7325	H 4
7326	G 4
7327	J 4
7329	C 6
7350	K 4
9321	D 2
9322	F 2
9323	A12
9324	J 6
9325	J 6
9326	J 6
9327	K 9
9328	K10
9329	I12
9330	F12
9331	D12
9358	G14
9359	G15

0022	A2	2924	D8	2930	E9	2937	A10	2946	F2	2955	C17	3926	E8	3932	F10	3938	G11	3948	E6	3968	F16	3981	G6	3994	F16	6942	G16	7931	G5
1921	C18	2925	C9	2931	C2	2938	G10	2950	F3	2956	E17	3927	C8	3933	F2	3940	H11	3963	C15	3969	D17	3982	G5	5921	C15	7923	G13	7932	G7
1922	C2	2926	E9	2932	D14	2939	G11	2951	H3	2957	G5	3928	E8	3934	G2	3941	H14	3964	E15	3970	D17	3983	G6	5922	E15	7924	G12	9949	C16
1925	E18	2927	A9	2933	B9	2940	H14	2952	F6	3921	B7	3929	A9	3935	H13	3945	E4	3965	C15	3978	E7	3984	G5	6921	E4	7925	E6	9950	E16
1928	D2	2928	G9	2934	G9	2944	F3	2953	C15	3922	D7	3930	G9	3936	H12	3946	F5	3966	E15	3979	G8	3985	G4	6939	G5	7927	G8		
2923	B8	2929	C9	2936	G7	2945	H3	2954	E15	3925	C8	3931	A10	3937	G13	3947	F6	3967	D16	3980	G8	3993	D16	6941	G16	7930	B12		

CENTER & SURROUND AMPLIFIER (40W + 40W)

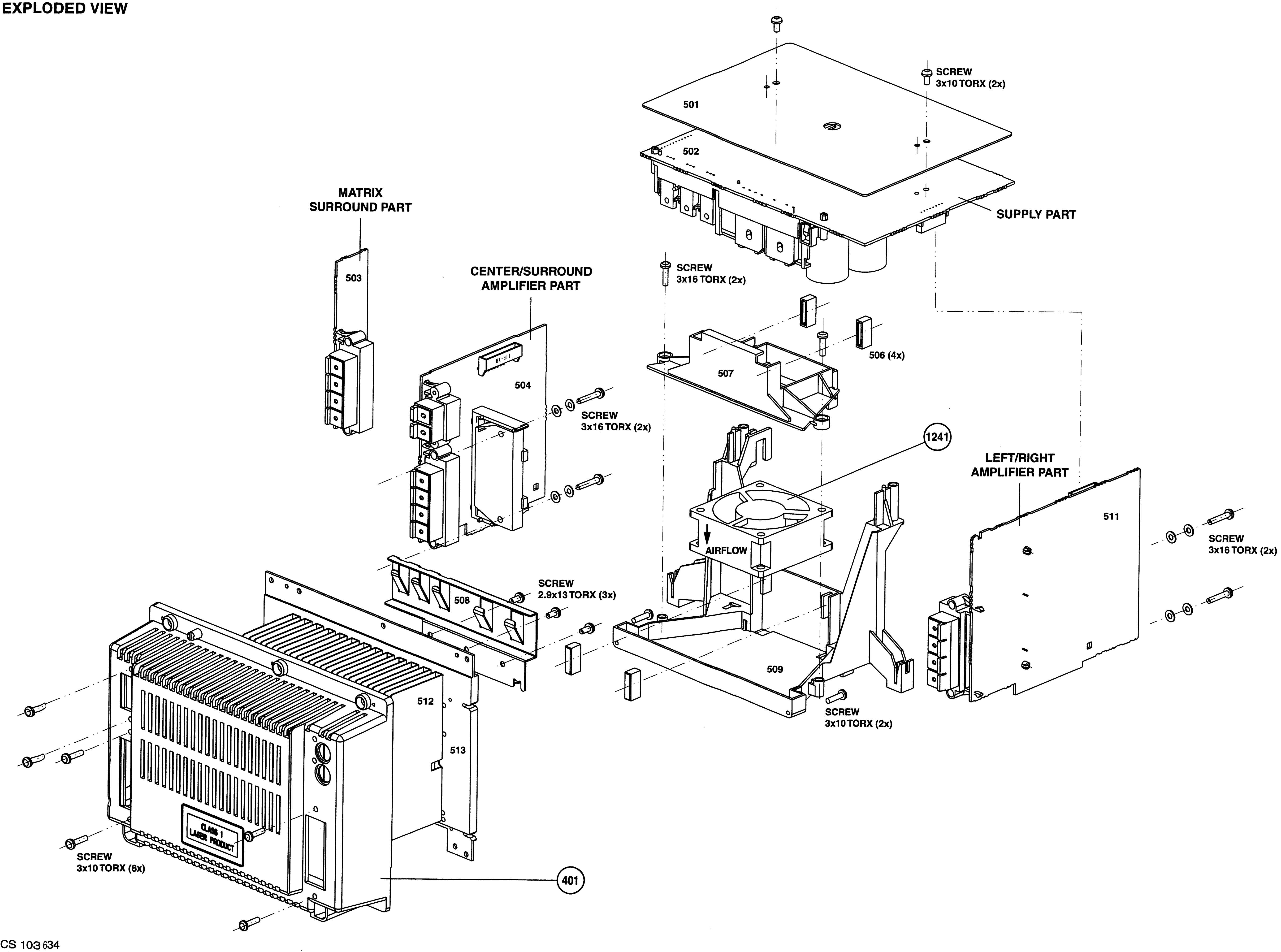

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A B C D E F G H
0022
C 3
GND 2
S 1
1922
C 3
GND 2
S 1
2931 4n7
1928
NC 1
NC 2
DC 4
GND S 9
AMP OFF 3
+VL +37V 5
+VL +37V 6
GND C 7
GND 8
-VL -37V 10
-VL -37V 11
0V DC
AMP ON = -52V
AMP OFF (MUTE) = 4,7V
6921 1N4148
3945 100k
3933 47E
3934 47E
2946 10µ
2944 22µ
2950 47n
2945 22µ
2951 47n
+VL +37V
+VP +37V
-VL -37V
-VP -37V
From 1268 POWER SUPPLY (2x 130W + C/S)
3921 470E
2923 2µ2
3925 100k
3927 56k
3922 470E
2924 2µ2
3926 100k
3928 56k
3929 470E
2927 220p
2933 22µ
3931 56k
2937 4p7
2925 3n3
2929 470p
2926 3n3
2930 470p
3930 470E
2928 220p
2934 22µ
3932 56k
2938 4p7
+37V +VP 9
+37V +VL 3
7930 STK407_040B
+VP
+VC
10 IN1 0V
11 NF1 0V
12 CCC
14 IN2 0V
13 NF2 0V
AMP ON = -35V
MUTE = -37V
OUT1 6 0V
OUT2 7 0V
Substrate 15
2932 47n
-VP
-VC2
-VC1
8 -37V 1 -37V 2
-VP -37V
7925 BC547B
-37V
3946 10k
3948 220E
3947 33k
3978 1k
2952 1000µ
-VP -37V
MUTE CIRCUIT
7931 BC547B 0V
7932 BC557B
7927 BC547B
2957 2µ2
3982 100k
3981 10k
3980 100k
3985 10k
3984 100k
6939 1N4148 -37V
3983 470E
2936 47n
3979 10k
-VL -37V
SOAR PROTECTION
7923 BC547B
7924 BC547B
0V
3938 1k8
3937 1k8
2939 10µ
3940 0E22
3936 3k3
3935 3k3
3941 0E22
2940 10µ
.....V Amplifier ON
+37V +VL
3965 150k
3963 4E7
5921
2953 47n
+33V +VL
3966 150k
3964 4E7
5922
2954 47n
9949
9950
3967 47k
3993 100k
3969 47k
3970 47k
DC
3968 47k
3994 100k
6942 BZX79/ C39
6941 BZX79/ C39
2955 4n7
2956 4n7
1921 CENTER
1 + 2 -
C
1925 SURROUND
1 + 2 - 3 - 4 +
L
R
P5-VA C/S Amplifier 99 09 24

COMPONENT LAYOUT C/S AMPLIFIER PART



0022	B	3
0023	C	2
1921	A	1
1922	B	3
1923	B	3
1925	C	1
1928	A	2
2923	B	3
2924	B	3
2925	B	2
2926	B	2
2927	B	2
2928	B	2
2929	B	2
2930	B	2
2931	B	2
2932	B	2
2933	B	3
2934	B	3
2935	B	3
2936	A	3
2937	B	1
2938	B	1
2939	C	2
2940	C	2
2944	C	3
2945	C	3
2946	C	3
2950	C	3
2951	C	2
2952	A	3
2953	A	1
2954	B	1
2955	A	1
2956	B	1
2957	A	3
3921	B	3
3922	B	3
3925	B	3
3926	B	3
3927	B	2
3928	B	2
3929	B	2
3930	B	2
3931	B	1
3932	B	1
3933	C	3
3934	C	3
3935	C	3
3936	C	3
3937	C	2
3938	C	3
3940	C	1
3941	C	1
3942	C	2
3943	C	1
3945	A	3
3946	A	3
3947	A	3
3948	A	3
3949	A	3
3963	A	1
3964	B	1
3965	A	2
3966	B	2
3967	A	2
3968	A	2
3969	A	1
3970	A	1
3973	A	2
3976	A	2
3977	A	3
3978	A	3
3979	A	3
3980	A	3
3981	C	3
3982	C	1
3983	A	3
3984	C	1
3985	C	1
3986	B	1
3987	A	1
3988	C	2
3989	C	1
3990	A	3
3991	A	2
3992	A	2
3993	C	3
3994	C	3
5921	A	1
5922	B	1
6921	A	3
6933	A	1
6934	B	1
6935	A	1
6936	A	1
6937	A	3
6939	C	1
6941	C	3
6942	C	3
7923	C	2
7924	C	3
7925	A	3
7926	A	3
7927	A	3
7928	A	3
7930	C	2
7931	C	1
7932	A	3
9921	B	3
9922	B	3
9923	C	2
9925	C	3
9926	C	2
9927	A	2
9928	B	2
9929	A	2
9930	B	2
9931	B	1
9932	A	3
9933	C	2
9935	B	3
9936	B	2
9937	A	3
9941	A	3
9942	A	2
9943	C	2
9944	A	3
9945	B	3
9947	C	2
9948	B	3
9949	A	1
9950	B	1

EXPLODED VIEW


SCREW
3x10 TORX (2x)
501
502
SUPPLY PART
MATRIX
SURROUND PART
503
CENTER/SURROUND
AMPLIFIER PART
504
SCREW
3x16 TORX (2x)
SCREW
3x16 TORX (2x)
506 (4x)
507
1241
LEFT/RIGHT
AMPLIFIER PART
511
SCREW
3x16 TORX (2x)
AIRFLOW
508
SCREW
2.9x13 TORX (3x)
509
SCREW
3x10 TORX (2x)
512
513
CLASS 1
LASER PRODUCT
SCREW
3x10 TORX (6x)
401

MECHANICAL PARTS LIST

0047	482225610557	Rucksack - L/R and C/S
0047	482225610558	Rucksack - L/R
1241	482236111161	DC Bruchless Fan
0029	482246693148	Spacer 5mm

ELECTRICAL PARTS LIST - MAINS BOARD

MISCELLANEOUS

1901	482226531015	⚠	Mains Socket
1901#	482226531016	⚠	Mains Socket
1902*	482227210269	⚠	Voltage Selector
1903*	482207152001	⚠	Fuse T200mA 250V
1905^	482207155002	⚠	Fuse T5A 250V
1905#	482225251123	⚠	Fuse T6,3A 250V
1906*	482207155002	⚠	Fuse T5A 250V
1907*	482207155002	⚠	Fuse T5A 250V
1909*	482226710728	⚠	Primary Connector
1910	482226520723	⚠	Primary Connector
1920	482207155002	⚠	Fuse T5A 250V
1921	482207155002	⚠	Fuse T5A 250V
1922	482207155002	⚠	Fuse T5A 250V
1923	482207155002	⚠	Fuse T5A 250V
1924	482207152502	⚠	Fuse T2,5A 250V
1925	482207151602	⚠	Fuse T1,6A 250V

CAPACITORS

2902	482212143526	47nF 5% 250V
2903	482212143526	47nF 5% 250V
2904*	482212440255	100µF 20% 63V
2905*	482212481029	100µF 20% 25V

RESISTORS

3901#	482205321106	⚠	10M 5% 0,5W
3902	482205011002		1k 1% 0,4W
3903	482205011002		1k 1% 0,4W
3904^	482211652244		15k 5% 0,5W
3904*	482211652283		4k7 5% 0,5W
3905*	482211652256		2k2 5% 0,5W
3906*	482211683864		10k 5% 0,5W
3908^	482205310471		470R 5% 1W
3920*	482205210108	⚠	1R 5% 0,33W

COILS & FILTERS

5901^	482215711832	⚠	400µH 3A
5902*	482215711628	⚠	Mains Choke
5903*	482214611144	⚠	Standby Transformer
5903^	482214611143	⚠	Standby Transformer
5903#	482214611142	⚠	Standby Transformer
5905	482228010382	⚠	Relay

DIODES

6900^	482213031878	1N4003G
6901	482213031878	1N4003G
6902	482213031878	1N4003G
6903	482213031878	1N4003G
6904	482213031878	1N4003G
6905	482213030621	1N4148
6906	482213030621	1N4148
6908*	482213034382	BZX79-C8V2
6909*	482213032245	BYV10-40
6910*	482213031878	1N4003G
6911	482213030621	1N4148
6912	482213030621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7901*	482213041246	BC327-25
7902*	482213040959	BC547B

* For /21/21M only
^ Except for /21/21M
# For /37 only

Note : Only the parts mentioned in this list are normal service spare parts.

ELECTRICAL PARTS LIST - SUPPLY & LEFT/RIGHT AMPLIFIER BOARD

MISCELLANEOUS

1321	482226731176	L/R Loudspeaker Terminal

CAPACITORS

2251	532212142578	100nF 5% 250V
2252	532212142578	100nF 5% 250V
2253	532212142578	100nF 5% 250V
2254	482212143526	47nF 5% 250V
2255	482212143526	47nF 5% 250V
2256	482212143526	47nF 5% 250V
2257	482212412423	4700µF 20% 63V
2258	482212412423	4700µF 20% 63V
2260	482212480415	4700µF 20% 50V

ELECTRICAL PARTS LIST - SUPPLY & LEFT/RIGHT AMPLIFIER BOARD

CAPACITORS

2262	482212480415	4700µF 20% 50V
2263	532212142386	100nF 5% 63V
2264	532212142386	100nF 5% 63V
2265	482212480563	4700µF 20% 35V
2267	482212440255	100µF 20% 63V
2268	482212440769	4,7µF 20% 100V
2269	482212210577	3,3nF 10% 16V
2270	482212440248	10µF 20% 63V
2271	482212440433	47µF 20% 25V
2279	532212142386	100nF 5% 63V
2280	482212412328	6800µF 16V
2282	482212440248	10µF 20% 63V
2289	482212421913	1µF 20% 63V
2290	482212440207	100µF 20% 25V
2300	482212151387	10nF 20% 16V
2301	482212441584	100µF 20% 10V
2303	482212141857	10nF 5% 250V
2321	482212233847	10pF 5% 50V
2322	482212233847	10pF 5% 50V
2323	482212422652	2,2µF 20% 50V
2324	482212422652	2,2µF 20% 50V
2325	482212233532	3,3nF 5% 50V
2326	482212233532	3,3nF 5% 50V
2327	532212232334	220pF 10% 100V
2328	532212232334	220pF 10% 100V
2329	532212232311	470pF 10% 100V
2330	532212232311	470pF 10% 100V
2331	532212232261	4,7nF 10% 100V
2333	482212481151	22µF 50V
2334	482212481151	22µF 50V
2335	482212233847	10pF 5% 50V
2336	482212233847	10pF 5% 50V
2341	482212611585	22nF +80/-20% 25V
2342	482212611585	22nF +80/-20% 25V
2343	482212422652	2,2µF 20% 50V
2344	482212440764	22µF 100 V
2345	482212440764	22µF 100 V
2346	482212440248	10µF 20% 63V
2347	482212440248	10µF 20% 63V
2348	482212481043	10µF 20% 100V
2349	482212481043	10µF 20% 100V
2350	532212142386	100nF 5% 63V
2351	532212142386	100nF 5% 63V
2352	482212440181	220µF 20% 10V
2353	532212142386	100nF 5% 63V
2354	532212142386	100nF 5% 63V
2355	532212232261	4,7nF 10% 100V
2356	532212232261	4,7nF 10% 100V
2365	482212612785	47nF 50V

RESISTORS

3251	482211652256		2k2 5% 0,5W
3252	482211652256		2k2 5% 0,5W
3254	482211652228		680R 5% 0,5W
3255	482211683883		470R 5% 0,5W
3259	482205021003		10k 1% 0,6W
3260	482211711342		0R33 5% 2W
3261	482211652206		120R 5% 0,5W
3262	482211652206		120R 5% 0,5W
3263	482205021003		10k 1% 0,6W
3265	482211652234		100k 5% 0,5W
3266	482211652228		680R 5% 0,5W
3267	482211652276		3k9 5% 0,5W
3268	482205021003		10k 1% 0,6W
3270	482211711342		0R33 5% 2W
3271	482205011002		1k 1% 0,4W
3272	482211652269		3k3 5% 0,5W
3272	482211652263		2k7 5% 0,5W
3273	482211652244		15k 5% 0,5W
3274	482205023303		33k 1% 0,6W
3275	482205023303		33k 1% 0,6W
3278	482211652256		2k2 5% 0,5W
3280	482211652239		120k 5% 0,5W
3281	482205021003		10k 1% 0,6W
3282	482205210479	⚠	47R 5% 0,33W
3285	482211652269		3k3 5% 0,5W
3286	482211652269		3k3 5% 0,5W
3287	482211652257		22k 5% 0,5W
3288	482205210479	⚠	47R 5% 0,33W
3289	482205210479	⚠	47R 5% 0,33W
3290	482211712063		NTC DC 5W 10k 5%
3295	482211683876		270R 5% 0,5W
3296	482211683883		470R 5% 0,5W
3298	482211652219		330R 5% 0,5W
3299	482211652219		330R 5% 0,5W
3300	482205210568	⚠	5R6 5% 0,33W
3302	482211683884		47k 5% 0,5W
3304	482211683884		47k 5% 0,5W
3305	482211652257		22k 5% 0,5W
3306	482211683882		39k 5% 0,5W
3309	482205023303		33k 1% 0,6W
3312	482205021003		10k 1% 0,6W
3313	482205011002		1k 1% 0,4W
3315	482211652291		56k 5% 0,5W
3316	482211683884		47k 5% 0,5W
3317	482205210109		10R 5% 0,33W
3321	482205021003		10k 1% 0,6W
3322	482205021003		10k 1% 0,6W
3323	482211652234		100k 5% 0,5W
3324	482205021003		10k 1% 0,6W
3325	482211652207		1k2 5% 0,5W
3326	482211652207		1k2 5% 0,5W
3327	482211652291		56k 5% 0,5W
3328	482211652291		56k 5% 0,5W

ELECTRICAL PARTS LIST - SUPPLY & LEFT/RIGHT AMPLIFIER BOARD

RESISTORS

3329	482211683883		470R 5% 0,5W
3330	482211683883		470R 5% 0,5W
3331	482211652291		56k 5% 0,5W
3332	482211652291		56k 5% 0,5W
3333	482205210479	⚠	47R 5% 0,33W
3334	482205210479	⚠	47R 5% 0,33W
3335	482211652207		1k2 5% 0,5W
3336	482211652207		1k2 5% 0,5W
3337	482205011002		1k 1% 0,4W
3338	482205011002		1k 1% 0,4W
3339	482211380633	⚠	0R1 5% 3W
3340	482211380633	⚠	0R1 5% 3W
3345	482211652234		100k 5% 0,5W
3346	482205021003		10k 1% 0,6W
3347	482205023303		33k 1% 0,6W
3348	482211683872		220R 5% 0,5W
3350	482205011002		1k 1% 0,4W
3351	482211652234		100k 5% 0,5W
3352	482211652234		100k 5% 0,5W
3353	482211652257		22k 5% 0,5W
3355	482211683961		6k8 5%
3356	482211683961		6k8 5%
3358	482205011002		1k 1% 0,4W
3363	482205310478	⚠	4R7 5% 1W
3364	482205310478	⚠	4R7 5% 1W
3365	482211652234		100k 5% 0,5W
3366	482211652234		100k 5% 0,5W
3367	482211652304		82k 5% 0,5W
3368	482211652304		82k 5% 0,5W
3369	482211683884		47k 5% 0,5W
3370	482211683884		47k 5% 0,5W
3383	482205021003		10k 1% 0,6W
3384	482205021003		10k 1% 0,6W
3385	482205210108	⚠	1R 5% 0,33W
3387	482205021003		10k 1% 0,6W
3388	482205021003		10k 1% 0,6W
3391	482211652176		10R 5% 0,5W
3392	482211652176		10R 5% 0,5W

COILS & FILTERS

5321	482215770599	IND FXD BEAD EMI
5322	482215770599	IND FXD BEAD EMI

DIODES

6251	482213011139	⚠	GBU8D
6251	482213083302	⚠	GBU4D
6252	532213080686		1N5392
6253	482213031878		1N4003G
6255	482213011139	⚠	GBU8D
6260	532213080686		1N5392
6261	532213080686		1N5392
6262	532213080686		1N5392
6263	532213080686		1N5392
6264	933166880133		BZX79-B11
6269	482213034281		BZX79-C15
6270	482213030621		1N4148
6271	482213030621		1N4148
6281	482213031878		1N4003G
6284	482213034173		BZX79-C5V6
6289	482213034281		BZX79-C15
6290	482213034281		BZX79-C15
6292	482213030621		1N4148
6293	482213034382		BZX79-C8V2
6294	532213080686		1N5392
6295	482213030621		1N4148
6298	482213034278		BZX79-C6V8
6299	482213030621		1N4148
6301	482213030621		1N4148
6302	532213031504		BZX79-C3V3
6325	482213034278		BZX79-C6V8
6326	482213034278		BZX79-C6V8
6333	482213034281		BZX79-C15
6334	482213034281		BZX79-C15
6337	482213030621		1N4148
6339	482213030621		1N4148
6360	482213034281		BZX79-C15

TRANSISTORS & INTEGRATED CIRCUITS

7251	932213923687	BDX53BFP
7252	482213040959	BC547B
7253	482213040959	BC547B
7255	482213040959	BC547B
7260	482213040959	BC547B
7263	482213040981	BC337-25
7265	482213041691	BC556B
7266	482213044568	BC557B
7268	482213040959	BC547B
7280	482213040959	BC547B
7281	482220931841	L7805CP
7282	482213041327	BC327-40
7286	482213041327	BC327-40
7290	482213041246	BC327-25
7323	482213044461	BC546B
7324	482213044461	BC546B
7325	482213040959	BC547B
7326	482213040959	BC547B
7327	482213044461	BC546B
7329	482220917384	STK496-430
7350	482213041691	BC556B

Note : Only the parts mentioned in this list are normal service spare parts.

ELECTRICAL PARTS LIST - CENTER/SURROUND AMPLIFIER BOARD

MISCELLANEOUS

1921	482226510464	Center Speaker Terminal
1925	482226510912	Surround Speaker Terminal

CAPACITORS

2923	482212422652	2,2µF 20% 50V
2924	482212422652	2,2µF 20% 50V
2925	482212233532	3,3nF 5% 50V
2926	482212233532	3,3nF 5% 50V
2927	532212232334	220pF 10% 100V
2928	532212232334	220pF 10% 100V
2929	532212232311	470pF 10% 100V
2930	532212232311	470pF 10% 100V
2931	532212232261	4,7nF 10% 100V
2932	482212233449	47nF 30% 50V
2933	482212481151	22µF 50V
2934	482212481151	22µF 50V
2936	482212612785	47nF 50V
2937	482212210465	4,7pF 10% 50V
2938	482212210465	4,7pF 10% 50V
2939	482212440248	10µF 20% 63V
2940	482212440248	10µF 20% 63V
2944	482212481151	22µF 50V
2945	482212481151	22µF 50V
2946	482212440248	10µF 20% 63V
2950	482212233449	47nF 30% 50V
2951	482212233449	47nF 30% 50V
2952	482212440181	220µF 20% 10V
2953	482212233449	47nF 30% 50V
2954	482212233449	47nF 30% 50V
2955	532212232261	4,7nF 10% 100V
2956	532212232261	4,7nF 10% 100V
2957	482212422652	2,2µF 20% 50V

RESISTORS

3921	482211683883		470R 5% 0,5W
3922	482211683883		470R 5% 0,5W
3925	482211652234		100k 5% 0,5W
3926	482211652234		100k 5% 0,5W
3927	482211652291		56k 5% 0,5W
3928	482211652291		56k 5% 0,5W
3929	482211683883		470R 5% 0,5W
3930	482211683883		470R 5% 0,5W
3931	482211652291		56k 5% 0,5W
3932	482211652291		56k 5% 0,5W
3933	482205210479	⚠	47R 5% 0,33W
3934	482205210479	⚠	47R 5% 0,33W
3935	482211652269		3k3 5% 0,5W
3936	482211652269		3k3 5% 0,5W
3937	482211652249		1k8 5% 0,5W
3938	482211652249		1k8 5% 0,5W
3940	482211711744	⚠	0R22 5% 1W
3941	482211711744	⚠	0R22 5% 1W
3945	482211652234		100k 5% 0,5W
3946	482205021003		10k 1% 0,6W
3947	482205023303		33k 1% 0,6W
3948	482211683872		220R 5% 0,5W
3963	482205310478	⚠	4R7 5% 1W
3964	482205310478	⚠	4R7 5% 1W
3965	482211652245		150k 5% 0,5W
3966	482211652245		150k 5% 0,5W
3967	482211683884		47k 5% 0,5W
3968	482211683884		47k 5% 0,5W
3969	482211683884		47k 5% 0,5W
3970	482211683884		47k 5% 0,5W
3978	482205011002		1k 1% 0,4W
3979	482205021003		10k 1% 0,6W
3980	482211652234		100k 5% 0,5W
3981	482205021003		10k 1% 0,6W
3982	482211652234		100k 5% 0,5W
3983	482211683883		470R 5% 0,5W
3984	482211652234		100k 5% 0,5W
3985	482205021003		10k 1% 0,6W
3993	482211652234		100k 5% 0,5W
3994	482211652234		100k 5% 0,5W

COILS & FILTERS

5921	482215762255	Coil 18,5 Turns
5922	482215762255	Coil 18,5 Turns

DIODES

6921	482213030621	1N4148
6939	482213030621	1N4148
6941	482213034145	BZX79-C39
6942	482213034145	BZX79-C39

TRANSISTORS & INTEGRATED CIRCUITS

7923	482213040959	BC547B
7924	482213040959	BC547B
7925	482213040959	BC547B
7927	482213040959	BC547B
7930	482220917448	STK496-040B
7931	482213040959	BC547B
7932	482213044568	BC557B

Note : Only the parts mentioned in this list are normal service spare parts.

AF8 BOARD

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BRIEF INTRODUCTION OF THE AF8 BOARD

The AF8 Board consists of the following features :

a. TDA7437 IC
TDA7437 (7511) audio processor IC includes functions such as source selection, loudness, dynamic bass control, treble control, front/rear volume control and muting function. Sound features such as DBB, DSC and IS are controllable via I^2C bus. All input sources are used namely CD, TUNER, TAPE, AUX and Differential input. Mono input is unused and terminated to ground via a capacitor.

b. MIC. MIXING
The AF8 Board can provide simple karaoke (without echo) which caters for mic. mixing with additional mic. amplifier board.

c. LINE OUT
Line out cinch is included for connection to external devices such as amplifier, recorders etc.

d. SUB-WOOFER OUT
Sub-woofer out cinch is included for connection to active sub-woofer speaker.

e. INCREDIBLE SURROUND
Incredible surround effect using transistor circuit to create phase shifting and spatial effect.

f. HEADPHONE AMPLIFIER
A headphone can be driven by Op-amp NJM4556AM.

g. CD STANDBY CONTROL
Control circuit that switches on the supply to CD servo control IC, HF circuit and the laser light pen in CD mode only.

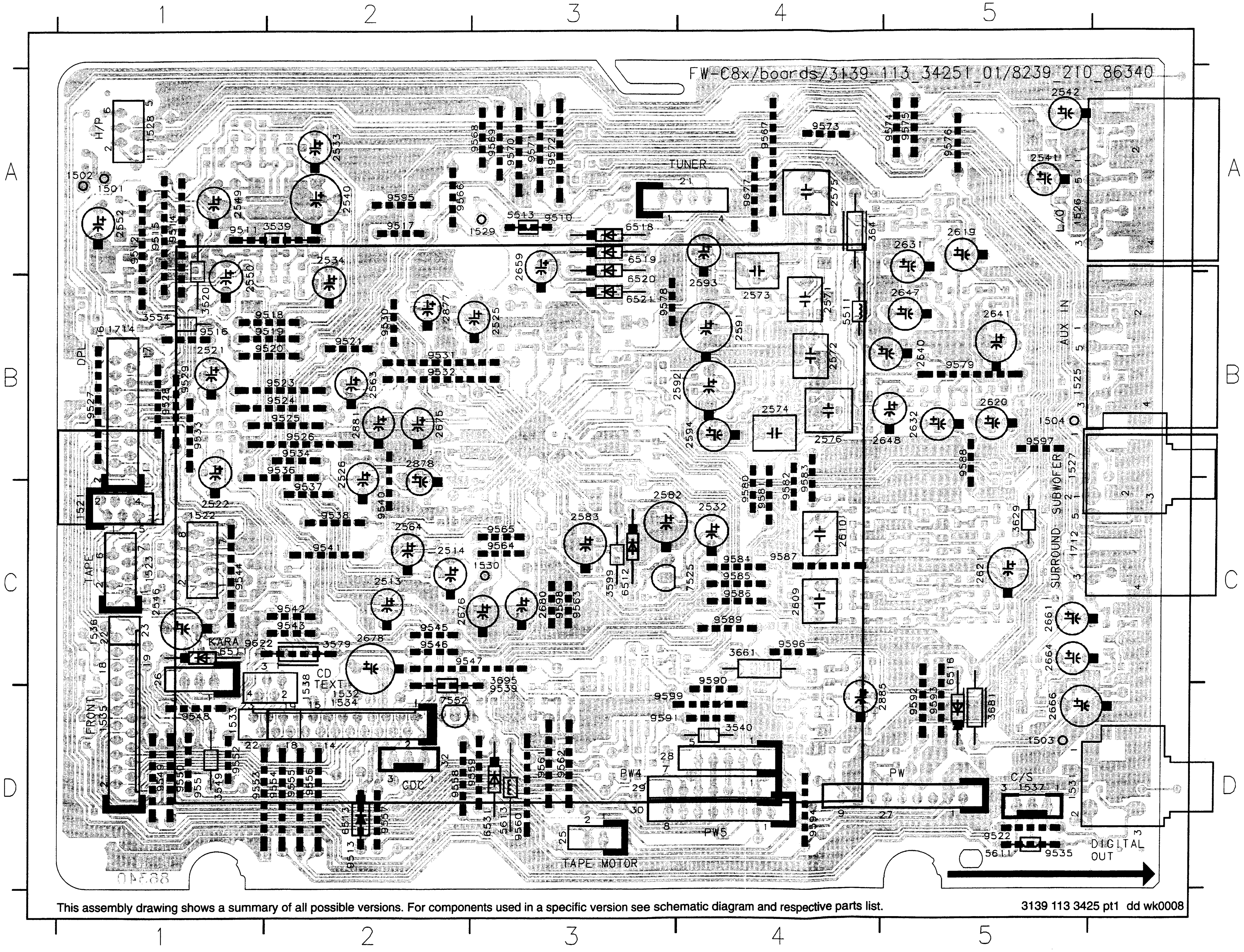
h. HEADPHONE SENSING
Headphone sense circuit is for switching off DPL modes when headphone is plugged in.

i. ATTENUATION NETWORK
This is provided at the output of the AF8 Board for interfacing with power modules.

j. BASS AUTOMATIC LEVEL CONTROL (ALC)
This circuit will defeat the bass effect if it sense that there is excessive amount of bass frequencies present in the left and right audio channel. This will prevent the excessive speaker excursions under high volume condition.

k. SURROUND OUT
Surround out cinch is included for Dolby Prologic versions when AF8 Board is used together with DPL PCB MINI 2000.

AF8 BOARD - COMPONENT LAYOUT

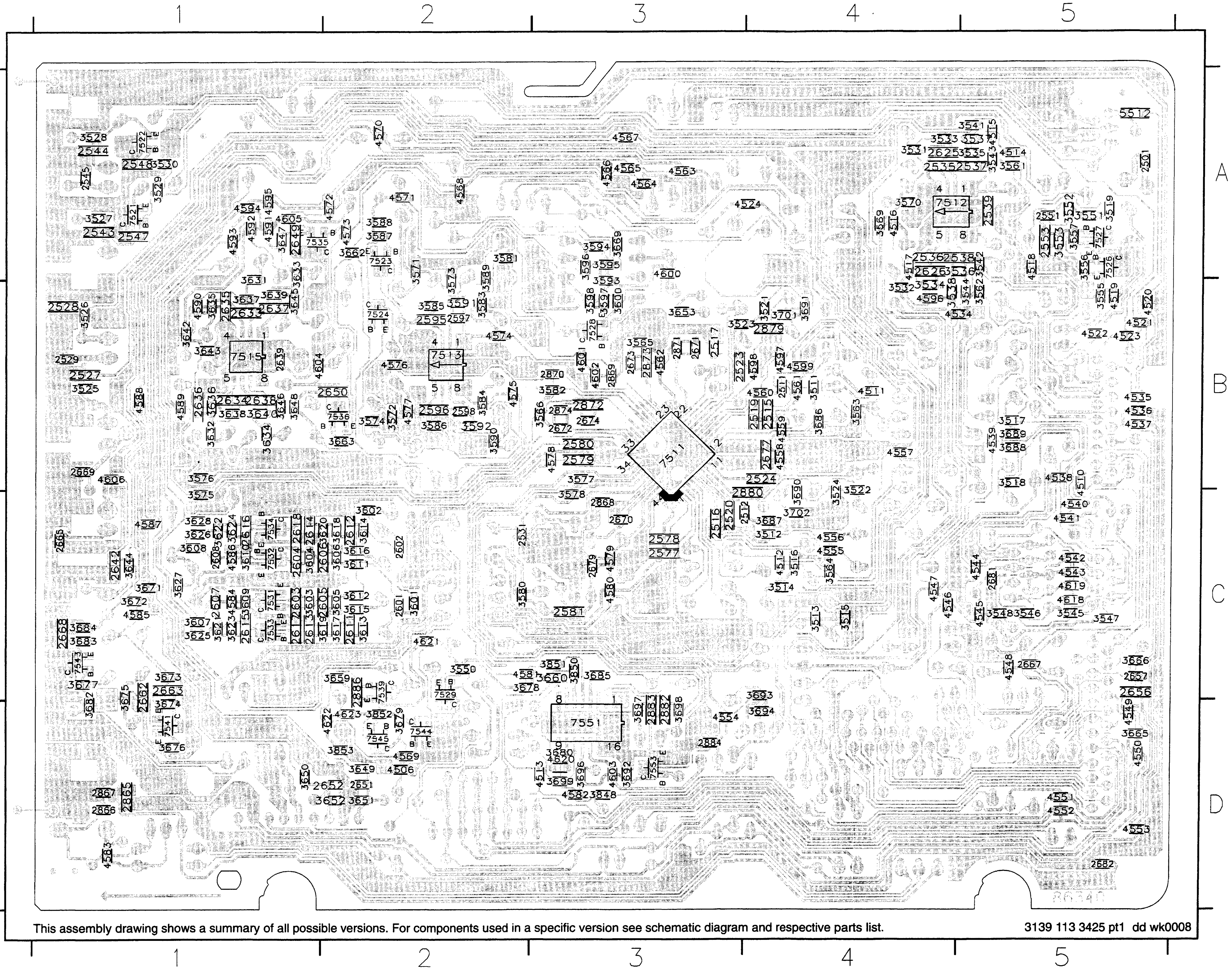


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3425 pt1 dd wk0008

21	A4
25	D3
26	C1
27	D5
28	D3
29	D3
30	D3
32	D2
1501	A1
1502	A1
1503	D5
1504	B5
1521	C1
1522	C1
1523	C1
1525	B5
1526	A5
1527	B5
1528	A1
1529	A3
1530	C3
1531	D5
1532	D2
1533	D1
1534	D2
1535	D1
1536	C1
1537	D5
1538	D2
1712	C5
1714	B1
2513	C2
2514	C2
2521	B1
2522	C1
2525	B3
2526	B2
2532	C4
2533	A2
2534	A2
2540	A2
2541	A5
2542	A5
2546	C1
2549	A1
2550	B1
2552	A1
2563	B2
2564	C2
2571	B4
2572	B4
2573	B4
2574	B4
2575	A4
2576	B4
2582	C3
2583	C3
2591	B4
2592	B3
2593	B4
2594	B4
2609	C4
2610	C4
2619	A5
2620	B5
2621	C5
2631	A5
2632	B5
2640	B5
2641	B5
2647	B5
2648	B5
2659	A3
2661	C5
2664	C5
2666	D5
2675	B2
2676	C2
2678	C2
2680	C3
2877	B2
2878	B2
2881	B2
2885	D5
3520	B1
3539	A2
3540	D4
3549	D1
3554	B1
3579	C2
3599	C3
3629	C5
3641	A4
3661	C4
3681	D5
3695	C3
5511	B4
5513	A3
5611	D5
5613	D3
6511	C1
6512	C3
6513	D2
6516	C5
6518	A3
6519	A3
6520	B3
6521	B3
6531	D3
7525	C4
7552	D2
9510	A3
9511	A1
9512	A1
9513	D2
9514	A1
9515	A1
9516	B1
9517	A2
9518	B2
9519	B2
9520	B2
9521	B2
9522	D5
9523	B2
9524	B2
9525	B2
9526	B2
9527	B1
9528	B1
9529	B1
9530	B2
9531	B2
9532	B2
9533	B1
9534	B2
9535	D5
9536	B2
9537	C2
9538	C2
9539	D3
9540	C2
9541	C2
9542	C2
9543	C2
9544	C1
9545	C2
9546	C2
9547	C2
9548	D1
9549	D1
9550	D1
9551	D1
9552	D1
9553	D1
9554	D2
9555	D2
9556	D2
9557	D2
9558	D2
9559	D3
9560	D3
9561	D3
9562	D3
9563	C3
9564	C3
9565	C3
9566	A2
9567	A4
9568	A3
9569	A3
9570	A3
9571	A3
9572	A3
9573	A4
9574	A5
9575	A5
9576	A5
9578	B3
9579	B5
9580	C4
9581	C4
9582	C4
9583	C4
9584	C4
9585	C4
9586	C4
9587	C4
9588	B5
9589	C4
9590	C4
9591	D3
9592	D5
9593	D5
9594	D4
9595	A2
9596	C4
9597	B5
9598	C3
9599	D3
9622	C1
9677	A4

AF8 BOARD - CHIP LAYOUT



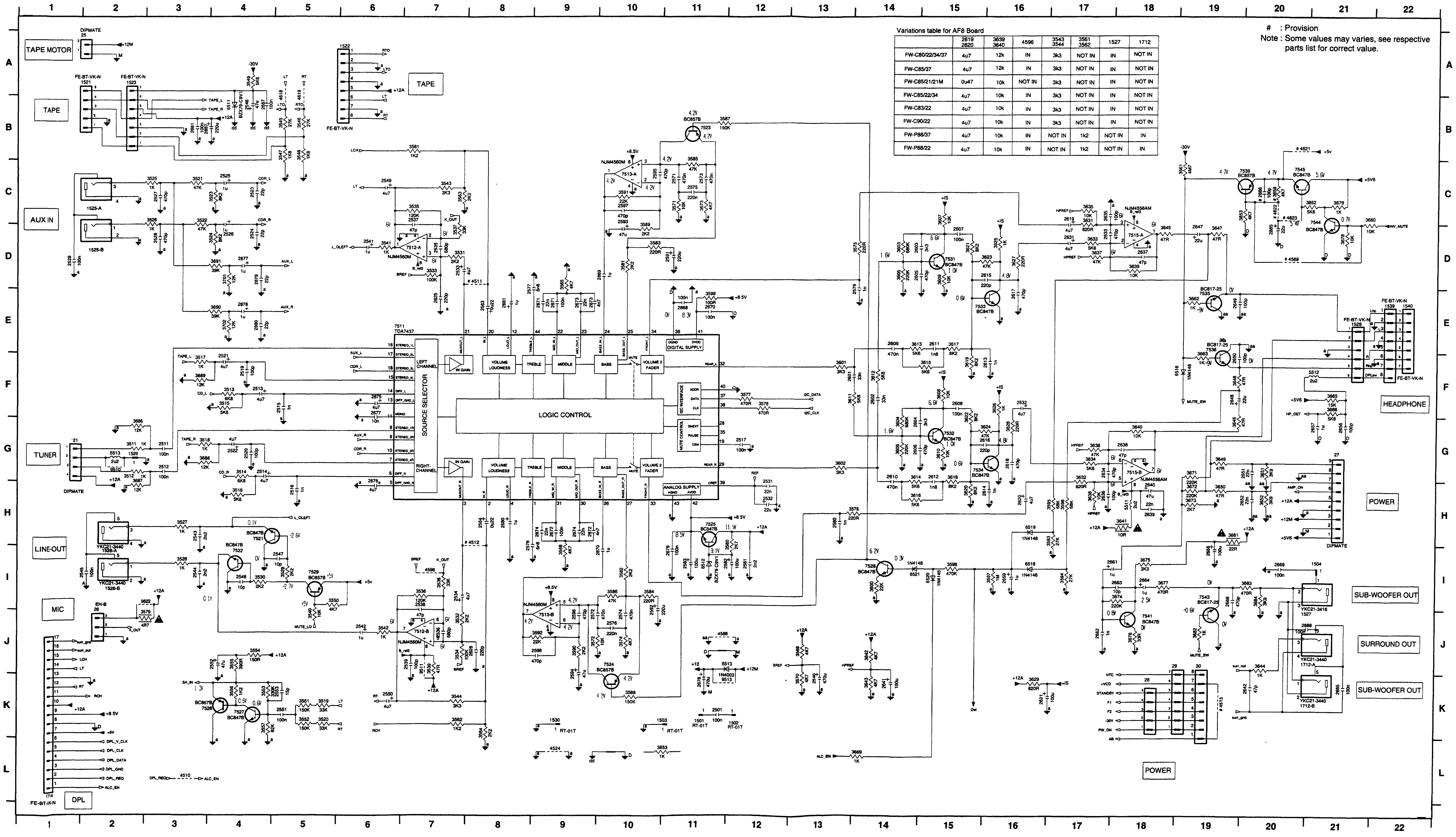
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3425 pt1 dd wk0008

2501	A5	2665	C1	3556	A5	3634	B1	4518	A5	4596	B4
2511	B4	2667	C5	3557	A5	3635	B1	4519	B5	4597	B4
2512	C3	2668	C1	3561	A5	3636	B1	4520	B5	4598	B4
2515	B4	2669	B1	3562	B5	3637	B1	4521	B5	4599	B4
2516	C3	2670	C3	3563	B4	3638	B1	4522	B5	4600	A3
2517	B3	2671	B3	3564	C4	3639	B1	4523	B5	4601	B3
2519	B4	2672	B3	3565	B3	3640	B1	4524	A4	4602	B3
2520	C3	2673	B3	3566	B3	3642	B1	4534	B4	4603	D3
2523	B3	2674	B3	3569	A4	3643	B1	4535	B5	4604	B1
2524	B4	2677	B4	3570	A4	3644	C1	4536	B5	4605	A1
2527	B1	2679	C3	3571	A2	3645	B1	4537	B5	4606	B1
2528	B1	2681	C5	3572	B2	3646	B1	4538	B5	4618	C5
2529	B1	2682	D5	3573	B2	3647	A1	4539	B5	4619	C5
2531	C2	2865	D1	3574	B2	3648	B1	4540	C5	4620	D3
2535	A4	2866	D1	3575	C1	3649	D2	4541	C5	4621	C2
2536	A4	2867	D1	3576	B1	3650	D1	4542	C5	4622	D2
2537	A5	2868	C3	3577	B3	3651	D2	4543	C5	4623	D2
2538	A4	2869	B3	3578	C3	3652	D2	4544	C5	5512	A5
2539	A5	2870	B3	3580	C2	3653	B3	4545	C5	7511	B3
2543	A1	2871	B3	3581	A2	3659	C2	4546	C4	7512	A4
2544	A1	2872	B3	3582	B3	3660	C3	4547	C4	7513	B2
2545	A1	2873	B3	3583	B2	3662	A2	4548	C5	7515	B1
2547	A1	2874	B3	3584	B2	3663	B2	4549	D5	7521	A1
2548	A1	2879	B4	3585	B2	3665	D5	4550	D5	7522	A1
2551	A5	2880	C4	3586	B2	3666	C5	4551	D5	7523	A2
2553	A5	2882	D3	3587	A2	3669	A3	4552	D5	7524	B2
2577	C3	2883	D3	3588	A2	3671	C1	4553	D5	7526	A5
2578	C3	2884	D3	3589	A2	3672	C1	4554	D3	7527	A5
2579	B3	2886	C2	3590	B2	3673	C1	4555	C4	7528	B3
2580	B3	3511	B4	3591	B2	3674	D1	4556	C4	7529	C2
2581	C3	3512	C4	3592	B2	3675	C1	4557	B4	7531	C1
2595	B2	3513	C4	3593	B3	3676	D1	4558	B4	7532	C1
2596	B2	3514	C4	3594	A3	3677	C1	4559	B4	7533	C1
2597	B2	3515	C4	3595	A3	3678	C2	4560	B4	7534	C1
2598	B2	3516	C4	3596	A3	3679	D2	4561	B4	7535	A1
2601	C2	3517	B5	3597	B3	3680	D3	4562	B3	7536	B2
2602	C2	3518	B5	3598	B3	3682	D1	4563	A3	7539	C2
2603	C1	3519	A5	3600	B3	3683	C1	4564	A3	7541	D1
2604	C1	3521	B4	3601	C2	3684	C1	4565	A3	7543	C1
2605	C2	3522	C4	3602	C2	3685	C3	4566	A3	7544	D2
2606	C2	3523	B3	3603	C1	3686	B4	4567	A3	7545	D2
2607	C1	3524	C4	3604	C1	3687	C4	4568	A2	7551	D3
2608	C1	3525	B1	3605	C2	3688	B5	4569	D2	7553	D3
2611	C2	3526	B1	3606	C2	3689	B5	4570	A2		
2612	C2	3527	A1	3607	C1	3690	C4	4571	A2		
2613	C1	3528	A1	3608	C1	3691	B4	4572	A2		
2614	C1	3529	A1	3609	C1	3692	D3	4573	A2		
2615	C1	3530	A1	3610	C1	3693	C4	4574	B2		
2616	C1	3531	A4	3611	C2	3694	D4	4575	B2		
2617	C1	3532	B4	3612	C2	3696	D3	4576	B2		
2618	C1	3533	A4	3613	C2	3697	D3	4577	B2		
2625	A4	3534	B4	3614	C2	3698	D3	4578	B3		
2626	A4	3535	A5	3615	C2	3699	D3	4579	C3		
2633	B1	3536	A5	3616	C2	3701	B4	4580	C3		
2634	B1	3537	A5	3617	C2	3702	C4	4581	C2		
2635	B1	3538	B4	3618	C2	3848	D3	4582	D3		
2636	B1	3541	A5	3619	C2	3850	C3	4583	D1		
2637	B1	3542	A5	3620	C2	3851	C3	4584	C1		
2638	B1	3543	A5	3621	C1	3852	D2	4585	C1		
2639	B1	3544	B5	3622	C1	3853	D2	4586	C1		
2642	C1	3545	C5	3623	C1	4506	D2	4587	C1		
2649	A1	3546	C5	3624	C1	4510	B5	4588	B1		
2650	B2	3547	C5	3625	C1	4511	B4	4589	B1		
2651	D2	3548	C5	3626	C1	4512	C4	4590	B1		
2652	D2	3550	C2	3627	C1	4513	D3	4591	A1		
2656	C5	3551	A5	3628	C1	4514	A5	4592	A1		
2657	C5	3552	A5	3631	A1	4515	A5	4593	A1		
2662	C1	3553	A5	3632	B1	4516	A4	4594	A1		
2663	C1	3555	B5	3633	A1	4517	A4	4595	A1		

AF8 BOARD - CIRCUIT DIAGRAM (PART 1)

21 G1
25 A1
26 I2
27 G21
28 K18
29 J18
30 J19
1501 K11
1502 K12
1503 K11
1504 I21
1521 A2
1522 A6
1523 A2
1525-A C2
1525-B D2
1526-A I2
1526-B I2
1527 J20
1528 E21
1529 G2
1530 K9
1539 E22
1540 E22
1712-A J20
1712-B K20
1714 L1
2501 K11
2511 G3
2512 G3
2513 F4
2514 G4
2515 F5
2516 H5
2517 G12
2519 F4
2520 G4
2521 F4
2522 G4
2523 C4
2524 D4
2525 C4
2526 D4
2527 C3
2528 D3
2529 D1
2531 H12
2532 H12
2533 D7
2534 I7
2535 D7
2536 J7
2537 C7
2538 I7
2539 J7
2540 K13
2541 D6
2542 J6
2543 H3
2544 I3
2545 I2
2546 B4
2547 I5
2548 I4
2549 C6
2550 K6
2551 K5
2552 J4
2553 K5
2563 E8
2564 H8
2571 C11
2572 J9
2573 C11
2574 J10
2575 C11
2576 J10
2577 E8
2578 I8
2579 E14
2580 H13
2581 I12
2582 I12
2583 I11
2591 D11
2592 J10
2593 C10
2594 K9
2595 C10
2596 J9
2597 C10
2598 J9
2601 F13
2602 F14
2603 D14
2604 G14
2605 D14
2606 G14
2607 D15
2608 F15
2609 E14
2610 G14
2611 E15
2612 G15
2613 F16
2614 H16
2615 D16
2616 G16
2617 E16
2618 G16
2619 C17
2620 H16
2621 K16
2625 E7
2626 J8
2631 D17
2632 F16
2633 D17
2634 G17
2635 C17
2636 H17
2637 D18
2638 G18
2639 H18
2640 H18
2641 K14
2642 K20
2647 D19
2648 F19
2649 E19
2650 F19
2651 G20
2652 H20
2656 G21
2657 G21
2659 I16
2661 I18
2662 J17
2663 I18
2664 I18
2665 K21
2666 I19
2667 B4
2668 I19
2669 I20
2670 E11
2671 E9
2672 H9
2673 E9
2674 H9
2675 F6
2676 H6
2677 F6
2678 K11
2679 I11
2680 H8
2681 B3
2868 E11
2869 D10
2870 I10
2871 E9
2872 H9
2873 E9
2874 H9
2877 D4
2878 E4
2879 D4
2880 E4
2881 E8
2885 D20
2886 C20
2887 B3
2888 J21
3511 G2
3512 G2
3513 F4
3514 G4
3515 F4
3516 H4
3517 F3
3518 G3
3519 K5
3520 K5
3521 C3
3522 C3
3523 C4
3524 D4
3525 C3
3526 C3
3527 H3
3528 I3
3529 I5
3530 I4
3531 D7
3532 J7
3533 D7
3534 J7
3535 C7
3536 I7
3537 D7
3538 I7
3539 J7
3540 J5
3541 D6
3542 J6
3543 C7
3544 K7
3545 B5
3546 B5
3547 B5
3548 B5
3549 A4
3550 I5
3551 K5
3552 K5
3553 K4
3554 J4
3555 J4
3556 K4
3557 K4
3561 B7
3562 K7
3563 C7
3564 K8
3565 D9
3566 I9
3569 J13
3570 K13
3571 C11
3572 J9
3573 C11
3574 J10
3575 D14
3576 H14
3577 F12
3578 F12
3579 J3
3580 I12
3581 D10
3582 I10
3583 D10
3584 I10
3585 B11
3586 I10
3587 B11
3588 K10
3589 D10
3590 J9
3591 C10
3592 J9
3593 H17
3594 I17
3595 H17
3596 H17
3597 I16
3598 I15
3599 E11
3600 I14
3601 F13
3602 G13
3603 D14
3604 G14
3605 D14
3606 G14
3607 C15
3608 F15
3609 D15
3610 G15
3611 F13
3612 F14
3613 E14
3614 G14
3615 F15
3616 H14
3617 E15
3618 G15
3619 F15
3620 H15
3621 D15
3622 G15
3623 D16
3624 G16
3625 D16
3626 F16
3627 D16
3628 G16
3629 K16
3631 C17
3632 G17
3633 D17
3634 G17
3635 C17
3636 H17
3637 D17
3638 G17
3639 D18
3640 G18
3641 H18
3642 J14
3643 K14
3644 J20
3645 D18
3646 G19
3647 D19
3648 F19
3649 G19
3650 H19
3651 G20
3652 H20
3653 L11
3659 C20
3660 C21
3661 C19
3662 E19
3663 F19
3665 F21
3666 F21
3669 L14
3671 G19
3672 H19
3673 H19
3674 I18
3675 I18
3676 J18
3677 I18
3678 D21
3679 C21
3681 H19
3682 J19
3683 I20
3684 I20
3686 G2
3687 H2
3688 G3
3689 F3
3690 E4
3691 D4
3701 D4
3702 E4
3852 C21
3853 C19
4510 L3
4511 D8
4512 H8
4513 K19
4524 L9
4569 D20
4588 J11
4596 I7
4618 B5
4619 B5
4621 B20
4622 C20
4623 C20
5511 H18
5512 F21
5513 G2
6511 B4
6512 I11
6513 J12
6516 F19
6518 I16
6519 H16
6520 I15
6521 I14
7511 E6
7512-A D7
7512-B J7
7513-A C10
7513-B J9
7515-A D18
7515-B G18
7521 H4
7522 I4
7523 B11
7524 J10
7525 H11
7526 K4
7527 K4
7528 I14
7529 I5
7531 D15
7532 G15
7533 E15
7534 G15
7535 E19
7536 E19
7539 C19
7541 J18
7543 I19
7544 C21
7545 C20
9510 G2
9511 J7
9513 K12
9622 I3



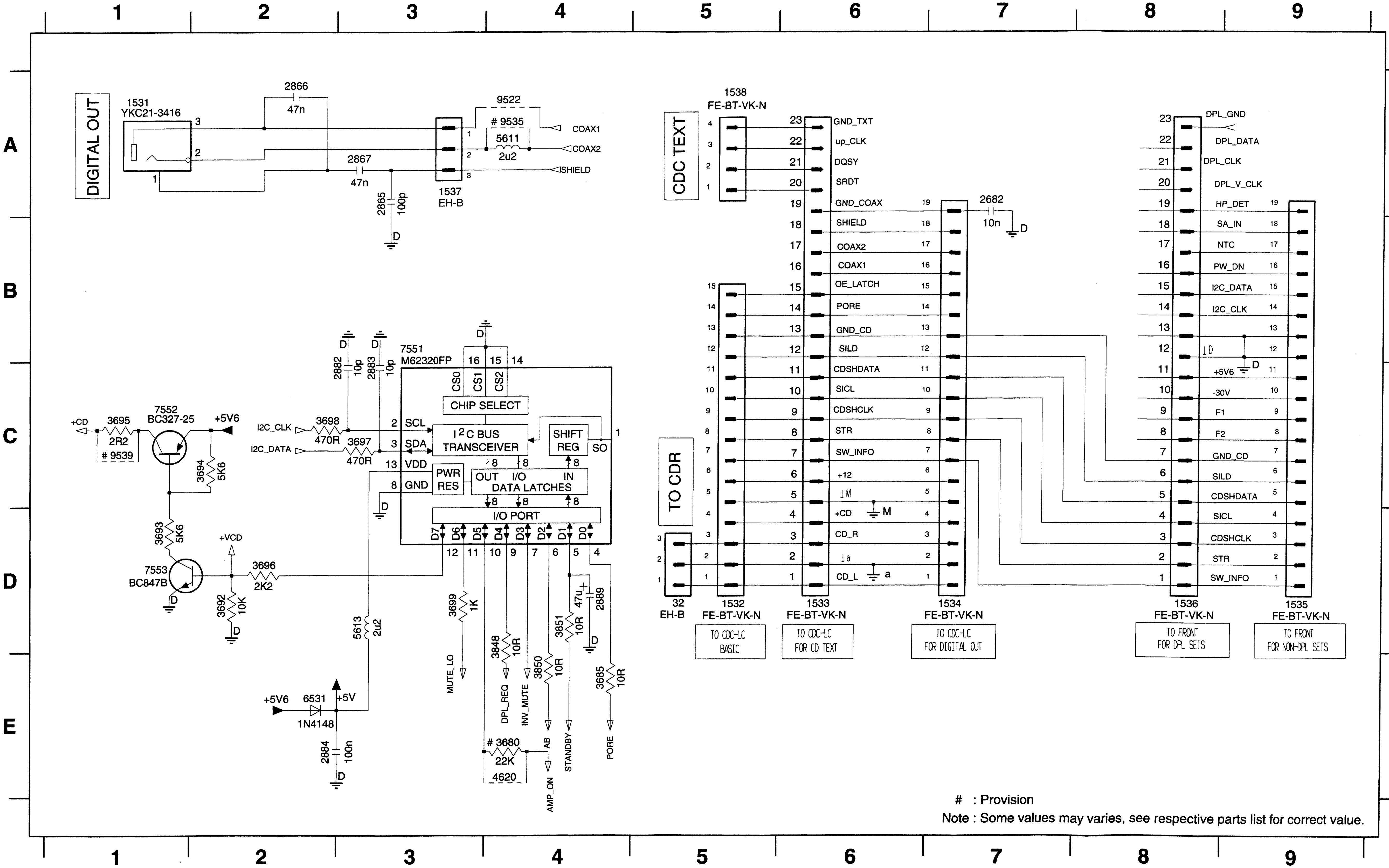
Variations table for AF8 Board

	2619 2620	3639 3640	4596	3543 3544	3561 3562	1527	1712
FW-C80/22/34/37	4u7	12k	IN	3k3	NOT IN	IN	NOT IN
FW-C85/37	4u7	12k	IN	3k3	NOT IN	IN	NOT IN
FW-C85/21/21M	0u47	10k	NOT IN	3k3	NOT IN	IN	NOT IN
FW-C85/22/34	4u7	10k	IN	3k3	NOT IN	IN	NOT IN
FW-C83/22	4u7	10k	IN	3k3	NOT IN	IN	NOT IN
FW-C90/22	4u7	10k	IN	3k3	NOT IN	IN	NOT IN
FW-P88/37	4u7	10k	IN	NOT IN	1k2	NOT IN	IN
FW-P88/22	4u7	10k	IN	NOT IN	1k2	NOT IN	IN

# : Provision
Note : Some values may varies, see respective parts list for correct value.

AF8 BOARD - CIRCUIT DIAGRAM (PART 2)

32 D5	1532 D5	1534 D7	1536 D8	1538 A5	2865 A3	2867 A3	2883 C3	2889 D4	3685 E4	3693 D1	3695 C1	3697 C3	3699 D3	3850 E4	4620 E4	5613 D3	7551 B3	7553 D1	9535 A4
1531 A1	1533 D6	1535 D9	1537 A3	2682 A7	2866 A2	2882 C3	2884 E2	3680 E4	3692 D2	3694 C2	3696 D2	3698 C2	3848 D4	3851 D4	5611 A4	6531 E2	7552 C1	9522 A4	9539 C1


1
2
3
4
5
6
7
8
9
A
B
C
D
E
DIGITAL OUT
1531
YKC21-3416
2866
47n
9522
# 9535
5611
2u2
COAX1
COAX2
SHIELD
2867
47n
2865
100p
1537
EH-B
D
CDC TEXT
1538
FE-BT-VK-N
GND_TXT
up_CLK
DQSY
SRDT
GND_COAX
SHIELD
COAX2
COAX1
OE_LATCH
PORE
GND_CD
SILD
CDSHDATA
SICL
CDSHCLK
STR
SW_INFO
+12
+CD
CD_R
CD_L
M
a
2682
10n
DPL_GND
DPL_DATA
DPL_CLK
DPL_V_CLK
HP_DET
SA_IN
NTC
PW_DN
I2C_DATA
I2C_CLK
+5V6
-30V
F1
F2
GND_CD
SILD
CDSHDATA
SICL
CDSHCLK
STR
SW_INFO
TO CDR
32
EH-B
1532
FE-BT-VK-N
1533
FE-BT-VK-N
1534
FE-BT-VK-N
1536
FE-BT-VK-N
1535
FE-BT-VK-N
TO CDC-LC BASIC
TO CDC-LC FOR CD TEXT
TO CDC-LC FOR DIGITAL OUT
TO FRONT FOR DPL SETS
TO FRONT FOR NON-DPL SETS
2882
10p
2883
10p
7551
M62320FP
CS0
CS1
CS2
CHIP SELECT
I²C BUS TRANSCEIVER
SHIFT REG
SO
SCL
SDA
VDD
GND
PWR RES
OUT I/O IN
DATA LATCHES
I/O PORT
D7
D6
D5
D4
D3
D2
D1
D0
I2C_CLK
I2C_DATA
3698
470R
3697
470R
+CD
3695
2R2
# 9539
7552
BC327-25
+5V6
3694
5K6
3693
5K6
7553
BC847B
+VCD
3696
2K2
3692
10K
5613
2u2
+5V6
6531
1N4148
+5V
2884
100n
3699
1K
MUTE_LO
3848
10R
DPL_REQ
INV_MUTE
3850
10R
AB
3851
10R
STANDBY
47u
2889
3685
10R
PORE
# 3680
22K
4620
AMP_ON

: Provision

Note : Some values may varies, see respective parts list for correct value.

ELECTRICAL PARTS LIST - AF8 BOARD

MISCELLANEOUS

1523	482226710953	Flex Connector 7P
1525	482226720452	Cinch Socket - Aux in
1526	482226720452	Cinch Socket - Line-out
1527	482226731729	Cinch Socket - Sub-Woofer out
1528	482226710731	Flex Connector 6P
1531	482226731729	Cinch Socket - Digital out
1533	482226710757	Flex Connector 23P
1534	482226511553	Flex Connector 19P
1535	482226511553	Flex Connector 19P
1536	482226710757	Flex Connector 23P
1538	482226710733	Flex Connector 4P
1712	482226731448	Cinch Socket - Surround out & Sub-Woofer out
1714	482226710871	Flex Connector 17P

CAPACITORS

2501	482212613838	100nF +80/-20% 50V
2511	482212613838	100nF +80/-20% 50V
2512	482212613838	100nF +80/-20% 50V
2513	482212440769	4,7µF 20% 100V
2514	482212440769	4,7µF 20% 100V
2515	532212231647	1nF 10% 63V
2516	532212231647	1nF 10% 63V
2517	482212614585	100nF 10% 50V
2519	532212232531	100pF 5% 50V
2520	532212232531	100pF 5% 50V
2521	482212440769	4,7µF 20% 100V
2522	482212440769	4,7µF 20% 100V
2523	532212232658	22pF 5% 50V
2524	532212232658	22pF 5% 50V
2525	482212421913	1µF 20% 63V
2526	482212421913	1µF 20% 63V
2527	532212234099	470pF 10% 63V
2528	532212234099	470pF 10% 63V
2529	482212614585	100nF 10% 50V
2531	532212232654	22nF 10% 63V
2532	482212481151	22µF 50V
2533	482212440769	4,7µF 20% 100V
2534	482212440769	4,7µF 20% 100V
2535	482212232535	680pF 10% 63V
2536	482212232535	680pF 10% 63V
2537	482212613692	47pF 1% 63V
2538	482212613692	47pF 1% 63V
2539	532212232531	100pF 5% 50V
2540	482212480195	470µF 20% 10V
2541	482212421913	1µF 20% 63V
2542	482212421913	1µF 20% 63V
2543	482212233127	2,2nF 10% 63V
2544	482212233127	2,2nF 10% 63V
2545	482212614585	100nF 10% 50V
2546	482212441751	47µF 20% 50V
2547	532212232448	10pF 5% 63V
2548	532212232448	10pF 5% 63V
2549	482212440769	4,7µF 20% 100V
2550	482212440769	4,7µF 20% 100V
2551	482212614585	100nF 10% 50V
2552	482212440433	47µF 20% 25V
2553	482212613486	15pF 2% 63V
2563	482212440746	0,22µF 20% 63V
2564	482212440746	0,22µF 20% 63V
2571	482212151252	470nF 5% 63V
2572	482212151252	470nF 5% 63V
2573	482212151252	470nF 5% 63V
2574	482212151252	470nF 5% 63V
2575	482212142408	220nF 5% 63V
2576	482212142408	220nF 5% 63V
2577	532212231866	6,8nF 10% 63V
2578	532212231866	6,8nF 10% 63V
2579	532212231647	1nF 10% 63V
2580	532212231647	1nF 10% 63V
2581	482212233127	2,2nF 10% 63V
2582	482212440207	100µF 20% 25V
2583	482212440207	100µF 20% 25V
2591	482212480144	220µF 20% 25V
2592	482212480144	220µF 20% 25V
2593	482212440433	47µF 20% 25V
2594	482212440433	47µF 20% 25V
2595	532212234099	470pF 10% 63V
2596	532212234099	470pF 10% 63V
2597	532212232268	470pF 10% 50V
2598	532212232268	470pF 10% 50V
2601	482212612105	33nF 5% 50V
2602	482212612105	33nF 5% 50V
2603	482212233891	3,3nF 10% 63V
2604	482212233891	3,3nF 10% 63V
2605	532212234099	470pF 10% 63V
2606	532212234099	470pF 10% 63V
2607	482212614585	100nF 10% 50V
2608	482212614585	100nF 10% 50V
2609	482212151252	470nF 5% 63V
2610	482212151252	470nF 5% 63V
2611	482212610847	1,8nF 10% 63V
2612	482212610847	1,8nF 10% 63V
2613	532212231647	1nF 10% 63V
2614	532212231647	1nF 10% 63V
2615	482212233575	220pF 5% 63V
2616	482212233575	220pF 5% 63V
2617	532212234099	470pF 10% 63V
2618	532212234099	470pF 10% 63V
2619	482212440769	4,7µF 20% 100V
2620	482212440769	4,7µF 20% 100V
2621	482212440207	100µF 20% 25V
2625	482212233575	220pF 5% 63V
2626	482212233575	220pF 5% 63V

ELECTRICAL PARTS LIST - AF8 BOARD

2631	482212440769	4,7µF 20% 100V
2632	482212440769	4,7µF 20% 100V
2633	532212234099	470pF 10% 63V
2634	532212234099	470pF 10% 63V
2635	532212232531	100pF 5% 50V
2636	532212232531	100pF 5% 50V
2637	482212613692	47pF 1% 63V
2638	482212613692	47pF 1% 63V
2639	532212232654	22nF 10% 63V
2640	482212440433	47µF 20% 25V
2641	482212440207	100µF 20% 25V
2642	482212613692	47pF 1% 63V
2647	482212481151	22µF 50V
2648	482212481151	22µF 50V
2649	532212232531	100pF 5% 50V
2650	532212232531	100pF 5% 50V
2651	532212232654	22nF 10% 63V
2652	532212232654	22nF 10% 63V
2656	532212232531	100pF 5% 50V
2657	482212614043	1µF +80/-20% 16V
2659	482212440756	1µF 20% 100V
2661	482212421913	1µF 20% 63V
2662	532212231647	1nF 10% 63V
2663	532212232448	10pF 5% 63V
2664	482212421913	1µF 20% 63V
2665	482212614585	100nF 10% 50V
2666	482212440207	100µF 20% 25V
2667	482212614585	100nF 10% 50V
2668	532212234099	470pF 10% 63V
2669	482212614585	100nF 10% 50V
2670	482212613838	100nF +80/-20% 50V
2671	482212613838	100nF +80/-20% 50V
2672	482212613838	100nF +80/-20% 50V
2673	532212232654	22nF 10% 63V
2674	532212232654	22nF 10% 63V
2675	482212412032	4,7µF 20% 50V
2676	482212412032	4,7µF 20% 50V
2677	482212233177	10nF 20% 50V
2678	482212480791	470µF 16V 20%
2679	482212614585	100nF 10% 50V
2680	482212440756	1µF 20% 100V
2681	482212614585	100nF 10% 50V
2682	532212234098	10nF 10% 63V
2865	532212232531	100pF 5% 50V
2866	482212613751	47nF 10% 63V
2867	482212613751	47nF 10% 63V
2868	482212614585	100nF 10% 50V
2869	482212614043	1µF +80/-20% 16V
2870	482212614043	1µF +80/-20% 16V
2871	532212232654	22nF 10% 63V
2872	532212610223	4,7nF 10% 63V
2873	532212610223	4,7nF 10% 63V
2874	532212232654	22nF 10% 63V
2877	482212422651	1µF 20% 50V
2878	482212422651	1µF 20% 50V
2879	532212232658	22pF 5% 50V
2880	532212232658	22pF 5% 50V
2881	482212440756	1µF 20% 100V
2882	532212232448	10pF 5% 63V
2883	532212232448	10pF 5% 63V
2884	482212614585	100nF 10% 50V
2885	482212481151	22µF 50V

RESISTORS

3511	482205110102	1k 2% 0,25W
3512	482205110102	1k 2% 0,25W
3513	482211711507	6k8 1% 0,1W
3514	482211711507	6k8 1% 0,1W
3515	482205120562	5k6 5% 0,1W
3516	482205120562	5k6 5% 0,1W
3517	482205110102	1k 2% 0,25W
3518	482205110102	1k 2% 0,25W
3519	482205120333	33k 5% 0,1W
3520	482205023303	33k 1% 0,6W
3521	482211710834	47k 1% 0,1W
3522	482211710834	47k 1% 0,1W
3523	482205120822	8k2 5% 0,1W
3524	482205120822	8k2 5% 0,1W
3525	482205110102	1k 2% 0,25W
3526	482205110102	1k 2% 0,25W
3527	482205110102	1k 2% 0,25W
3528	482205110102	1k 2% 0,25W
3529	482211711449	2k2 1% 0,1W
3530	482211711449	2k2 1% 0,1W
3531	482211711449	2k2 1% 0,1W
3532	482211711449	2k2 1% 0,1W
3533	482211710837	100k 1% 0,1W
3534	482211710837	100k 1% 0,1W
3535	482205120124	120k 5% 0,1W
3536	482205120124	120k 5% 0,1W
3537	482205120333	33k 5% 0,1W
3538	482205120333	33k 5% 0,1W
3539	482211652195	47R 5% 0,5W
3540	482205021003	10k 1% 0,6W
3541	482205110102	1k 2% 0,25W
3542	482205110102	1k 2% 0,25W
3543	482205120332	3k3 5% 0,1W
3544	482205120332	3k3 5% 0,1W
3545	482205120273	27k 5% 0,1W
3546	482205120273	27k 5% 0,1W
3547	482205120182	1k8 5% 0,1W
3548	482205120182	1k8 5% 0,1W
3549	482211652289	5k6 5% 0,5W
3550	482205120472	4k7 5% 0,1W

ELECTRICAL PARTS LIST - AF8 BOARD

RESISTORS

3551	482205120154	150k 5% 0,1W
3552	482205120154	150k 5% 0,1W
3553	482205120334	330k 5% 0,1W
3554	482211683868	150R 5% 0,5W
3555	482205120391	390R 5% 0,1W
3556	482205120122	1k2 5% 0,1W
3557	482211711149	82k 1% 0,1W
3561	482205120122	1k2 5% 0,1W
3562	482205120122	1k2 5% 0,1W
3563	482211711449	2k2 1% 0,1W
3564	482211711449	2k2 1% 0,1W
3565	482205120472	4k7 5% 0,1W
3566	482205120472	4k7 5% 0,1W
3569	482205120472	4k7 5% 0,1W
3570	482205120472	4k7 5% 0,1W
3571	482211710833	10k 1% 0,1W
3572	482211710833	10k 1% 0,1W
3573	482205120472	4k7 5% 0,1W
3574	482205120472	4k7 5% 0,1W
3575	482211711503	220R 1% 0,1W
3576	482211711503	220R 1% 0,1W
3577	482205120471	470R 5% 0,1W
3578	482205120471	470R 5% 0,1W
3579	482205210478	⚠ 4R7 5% 0,33W
3580	482211712955	2k7 1% 0,1W
3581	482211711449	2k2 1% 0,1W
3582	482211711449	2k2 1% 0,1W
3583	482211711503	220R 1% 0,1W
3584	482211711503	220R 1% 0,1W
3585	482211710834	47k 1% 0,1W
3586	482211710834	47k 1% 0,1W
3587	482205120154	150k 5% 0,1W
3588	482205120154	150k 5% 0,1W
3589	482211711449	2k2 1% 0,1W
3590	482211711449	2k2 1% 0,1W
3591	482205120223	22k 5% 0,1W
3592	482205120223	22k 5% 0,1W
3593	482205120273	27k 5% 0,1W
3594	482205120273	27k 5% 0,1W
3595	482205120683	68k 5% 0,1W
3596	482205120683	68k 5% 0,1W
3597	482205120105	1M 5% 0,1W
3598	482205120474	470k 5% 0,1W
3599	482211652175	100R 5% 0,5W
3600	482205120223	22k 5% 0,1W
3601	482205120332	3k3 5% 0,1W
3602	482205120332	3k3 5% 0,1W
3603	482205120684	680k 5% 0,1W
3604	482205120684	680k 5% 0,1W
3605	482211713579	220k 1% 0,1W
3606	482211713579	220k 1% 0,1W
3607	482211710833	10k 1% 0,1W
3608	482211710833	10k 1% 0,1W
3609	482211710833	10k 1% 0,1W
3610	482211710833	10k 1% 0,1W
3611	482205120562	5k6 5% 0,1W
3612	482205120562	5k6 5% 0,1W
3613	482205120562	5k6 5% 0,1W
3614	482205120562	5k6 5% 0,1W
3615	482205120562	5k6 5% 0,1W
3616	482205120562	5k6 5% 0,1W
3617	482205120822	8k2 5% 0,1W
3618	482205120822	8k2 5% 0,1W
3619	482205120822	8k2 5% 0,1W
3620	482205120822	8k2 5% 0,1W
3621	482205120822	8k2 5% 0,1W
3622	482205120822	8k2 5% 0,1W
3623	482211710834	47k 1% 0,1W
3624	482211710834	47k 1% 0,1W
3625	482205110102	1k 2% 0,25W
3626	482205110102	1k 2% 0,25W
3627	482211711503	220R 1% 0,1W
3628	482211711503	220R 1% 0,1W
3629	482211652231	820R 5% 0,5W
3631	482211711454	820R 1% 0,1W
3632	482211711454	820R 1% 0,1W
3633	482205120562	5k6 5% 0,1W
3634	482205120562	5k6 5% 0,1W
3635	482211710833	10k 1% 0,1W
3636	482211710833	10k 1% 0,1W
3637	482211710834	47k 1% 0,1W
3638	482211710834	47k 1% 0,1W
3639	482211710833	10k 1% 0,1W
3639	482211711383	12k 1% 0,1W /FW-C85/37
3640	482211710833	10k 1% 0,1W
3640	482211711383	12k 1% 0,1W /FW-C85/37
3641	482205210109	⚠ 10R 5% 0,33W
3642	482205120472	4k7 5% 0,1W
3643	482205120472	4k7 5% 0,1W
3644	482205110102	1k 2% 0,25W
3645	482205120479	47R 5% 0,1W
3646	482205120479	47R 5% 0,1W
3647	482205120479	47R 5% 0,1W
3648	482205120479	47R 5% 0,1W
3649	482205120479	47R 5% 0,1W
3650	482205120479	47R 5% 0,1W
3651	482205120392	3k9 5% 0,1W
3652	482205120392	3k9 5% 0,1W
3653	482205110102	1k 2% 0,25W
3660	482211710833	10k 1% 0,1W
3661	482205320475	4M7 5% 0,25W
3662	482205110102	1k 2% 0,25W
3663	482205110102	1k 2% 0,25W
3665	482211683933	15k 1% 0,1W

ELECTRICAL PARTS LIST - AF8 BOARD

3666	482205120562	5k6 5% 0,1W
3669	482205110102	1k 2% 0,25W
3671	482211713579	220k 1% 0,1W
3672	482211713579	220k 1% 0,1W
3673	482211712955	2k7 1% 0,1W
3674	482205120334	330k 5% 0,1W
3675	482205120332	3k3 5% 0,1W
3676	482205120339	33R 5% 0,1W
3677	482211710353	150R 1% 0,1W
3678	482211710833	10k 1% 0,1W
3679	482205110102	1k 2% 0,25W
3681	482205210229	⚠ 22R 5% 0,33W
3682	482205110102	1k 2% 0,25W
3683	482205120471	470R 5% 0,1W
3684	482205120392	3k9 5% 0,1W
3685	482205120109	10R 5% 0,1W
3686	482211711383	12k 1% 0,1W
3687	482211711383	12k 1% 0,1W
3688	482211711383	12k 1% 0,1W
3689	482211711383	12k 1% 0,1W
3690	482205120393	39k 5% 0,1W
3691	482205120393	39k 5% 0,1W
3692	482211710833	10k 1% 0,1W
3693	482205120562	5k6 5% 0,1W
3694	482205120562	5k6 5% 0,1W
3695	482211681154	2R2 5% 0,5W
3696	482211711449	2k2 1% 0,1W
3697	482205120471	470R 5% 0,1W
3698	482205120471	470R 5% 0,1W
3699	482205110102	1k 2% 0,25W
3701	482211711383	12k 1% 0,1W
3702	482211711383	12k 1% 0,1W
3848	482205120109	10R 5% 0,1W
3850	482205120109	10R 5% 0,1W
3851	482205120109	10R 5% 0,1W
3852	482205120562	5k6 5% 0,1W
3853	482205120472	4k7 5% 0,1W
4506	482205120008	0R Jumper 0805
4510	482205120008	0R Jumper 0805
4514	482205120008	0R Jumper 0805
4515	482205120008	0R Jumper 0805
4516	482205120008	0R Jumper 0805
4517	482205120008	0R Jumper 0805
4518	482205120008	0R Jumper 0805
4519	482205120008	0R Jumper 0805
4520	482205120008	0R Jumper 0805
4521	482205120008	0R Jumper 0805
4522	482205120008	0R Jumper 0805
4523	482205120008	0R Jumper 0805
4524	482205120008	0R Jumper 0805
4534	482205120008	0R Jumper 0805
4535	482205120008	0R Jumper 0805
4536	482205120008	0R Jumper 0805
4537	482205120008	0R Jumper 0805
4538	482205120008	0R Jumper 0805
4539	482205120008	0R Jumper 0805
4540	482205120008	0R Jumper 0805
4541	482205120008	0R Jumper 0805
4542	482205120008	0R Jumper 0805
4543	482205120008	0R Jumper 0805
4544	482205120008	0R Jumper 0805
4545	482205120008	0R Jumper 0805
4546	482205120008	0R Jumper 0805
4547	482205120008	0R Jumper 0805
4548	482205120008	0R Jumper 0805
4549	482205120008	0R Jumper 0805
4550	482205120008	0R Jumper 0805
4551	482205120008	0R Jumper 0805
4552	482205120008	0R Jumper 0805
4553	482205120008	0R Jumper 0805
4554	482205120008	0R Jumper 0805
4555	482205120008	0R Jumper 0805
4556	482205120008	0R Jumper 0805
4557	482205120008	0R Jumper 0805
4558	482205120008	0R Jumper 0805
4559	482205120008	0R Jumper 0805
4560	482205120008	0R Jumper 0805
4561	482205120008	0R Jumper 0805
4562	482205120008	0R Jumper 0805
4563	482205120008	0R Jumper 0805
4564	482205120008	0R Jumper 0805
4565	482205120008	0R Jumper 0805
4566	482205120008	0R Jumper 0805
4567	482205120008	0R Jumper 0805
4568	482205120008	0R Jumper 0805
4570	482205120008	0R Jumper 0805
4571	482205120008	0R Jumper 0805
4572	482205120008	0R Jumper 0805
4573	482205120008	0R Jumper 0805
4574	482205120008	0R Jumper 0805
4575	482205120008	0R Jumper 0805
4576	482205120008	0R Jumper 0805
4577	482205120008	0R Jumper 0805
4578	482205120008	0R Jumper 0805
4579	482205120008	0R Jumper 0805
4580	482205120008	0R Jumper 0805
4581	482205120008	0R Jumper 0805
4582	482205120008	0R Jumper 0805
4583	482205120008	0R Jumper 0805
4584	482205120008	0R Jumper 0805
4585	482205120008	0R Jumper 0805
4586	482205120008	0R Jumper 0805
4587	482205120008	0R Jumper 0805
4588	482205120008	0R Jumper 0805

ELECTRICAL PARTS LIST - AF8 BOARD

RESISTORS

4589	482205120008	0R Jumper 0805
4590	482205120008	0R Jumper 0805
4591	482205120008	0R Jumper 0805
4592	482205120008	0R Jumper 0805
4593	482205120008	0R Jumper 0805
4594	482205120008	0R Jumper 0805
4595	482205120008	0R Jumper 0805
4596	482205120008	0R Jumper 0805
4597	482205120008	0R Jumper 0805
4598	482205120008	0R Jumper 0805
4599	482205120008	0R Jumper 0805
4600	482205120008	0R Jumper 0805
4601	482205120008	0R Jumper 0805
4602	482205120008	0R Jumper 0805
4603	482205120008	0R Jumper 0805
4604	482205120008	0R Jumper 0805
4605	482205120008	0R Jumper 0805
4606	482205120008	0R Jumper 0805
4618	482205120008	0R Jumper 0805
4619	482205120008	0R Jumper 0805
4620	482205120008	0R Jumper 0805
4623	482205120008	0R Jumper 0805

COILS & FILTERS

5511	482215762552	Coil 2,2µH 5%
5512	482215710586	Coil 2,2µH 10%
5513	482215762552	Coil 2,2µH 5%
5611	482215762552	Coil 2,2µH 5%
5613	482215762552	Coil 2,2µH 5%

DIODES

6511	482213030862	BZX79-C9V1
6512	482213030862	BZX79-C9V1
6513	482213031878	1N4003G
6516	482213030621	1N4148
6518	482213030621	1N4148
6519	482213030621	1N4148
6520	482213030621	1N4148
6521	482213030621	1N4148
6531	482213030621	1N4148

TRANSISTORS & INTEGRATED CIRCUITS

7511	482220917386	TDA7437T
7512	482220983357	NJM4560M
7513	482220983357	NJM4560M
7515	482220931378	NJM4556AM
7521	482213060511	BC847B
7522	482213060511	BC847B
7523	482213060373	BC857B
7524	482213060373	BC857B
7525	482213040959	BC547B
7526	482213060373	BC857B
7527	482213060511	BC847B
7528	482213060511	BC847B
7529	482213060373	BC857B
7531	482213060511	BC847B
7532	482213060511	BC847B
7533	482213060511	BC847B
7534	482213060511	BC847B
7535	482213042804	BC817-25
7536	482213042804	BC817-25
7539	482213060373	BC857B
7541	482213060511	BC847B
7543	482213042804	BC817-25
7544	482213060511	BC847B
7545	482213060511	BC847B
7551	482220917345	M62320FP
7552	482213041246	BC327-25
7553	482213060511	BC847B

Note : Only the parts mentioned in this list are normal service spare parts.

DPL BOARD

(Dolby Pro Logic)

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Component & Chip layout 13-2
Circuit Diagram 13-3
Electrical parts list... 13-4

BRIEF INTRODUCTION OF THE DOLBY PRO LOGIC (DPL) BOARD

The DPL Board consists of the following features :

a. Dolby Pro Logic (DPL)
Dolby Pro Logic function is provided by IC M62460FP (7711). Delay circuit is also integrated into the same IC.

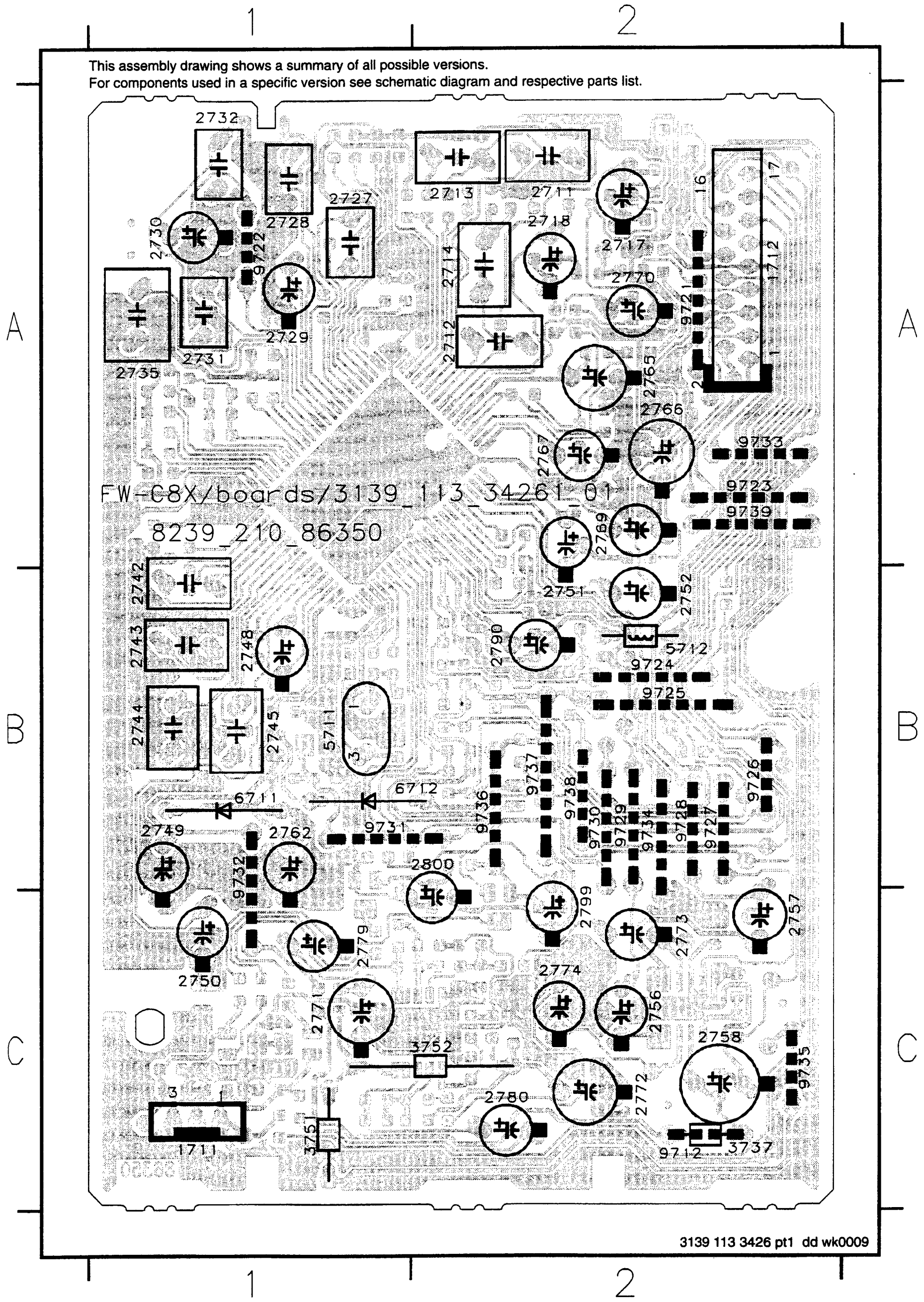
b. Volume Control for Centre and Surround Channel
Volume control and trim for both centre and surround channel is implemented using IC M62429FP (7712).

c. MCU Control
Separate muting control is available on both the centre and surround channel. MCU interface which is available on pins 19 and 20 of IC M62460FP (7711) are used to send mute control signals.

Bass ALC enable (ALC_EN) is controlled via pin 18 of MCU interface.

d. Software Control
Commands sent on DPL_CLK, DPL_DATA, DPL_V_CLK and DPL_REQ are used for switching in all DPL modes and leveling changes.

DPL BOARD - COMPONENT LAYOUT


1
2
A
B
C
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
FW-C8X/boards/3139_113_34261-01
8239_210_86350
2732
2728
2727
2713
2711
2718
2717
2730
9722
2729
2714
2770
1712
2735
2731
2712
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9733
9723
9739
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2751
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5712
2743
2748
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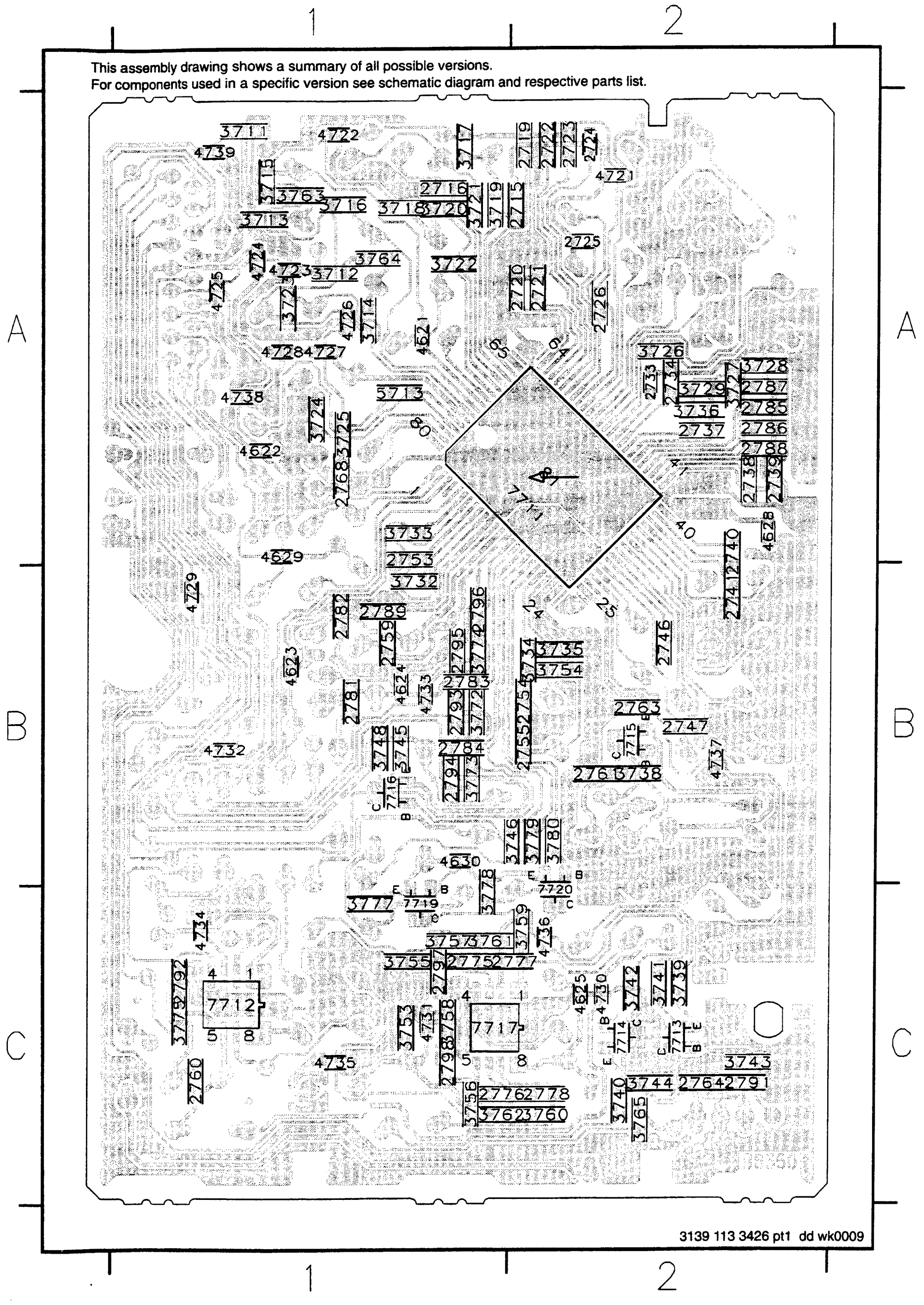
9724
9725
2744
2745
5711
9737
9738
9726
6711
6712
9731
9736
9730
9729
9734
9728
9727
2749
2762
9732
2800
2799
2773
2757
2750
2779
2771
2774
2756
2758
3752
2780
2772
9735
1711
3751
9712
3737
3139 113 3426 pt1 dd wk0009

1711	C1
1712	A2
2711	A2
2712	A2
2713	A2
2714	A2
2717	A2
2718	A2
2727	A1
2728	A1
2729	A1
2730	A1
2731	A1
2732	A1
2735	A1
2742	B1
2743	B1
2744	B1
2745	B1
2748	B1
2749	B1
2750	C1
2751	B2
2752	B2
2756	C2
2757	C2
2758	C2
2762	B1
2765	A2
2766	A2
2767	A2
2769	A2
2770	A2
2771	C1
2772	C2
2773	C2
2774	C2
2779	C1
2780	C2
2790	B2
2799	C2
2800	B2
3737	C2
3751	C1
3752	C2
5711	B1
5712	B2
6711	B1
6712	B2
9712	C2
9721	A2
9722	A1
9723	A2
9724	B2
9725	B2
9726	B2
9727	B2
9728	B2
9729	B2
9730	B2
9731	B1
9732	B1
9733	A2
9734	B2
9735	C2
9736	B2
9737	B2
9738	B2
9739	A2

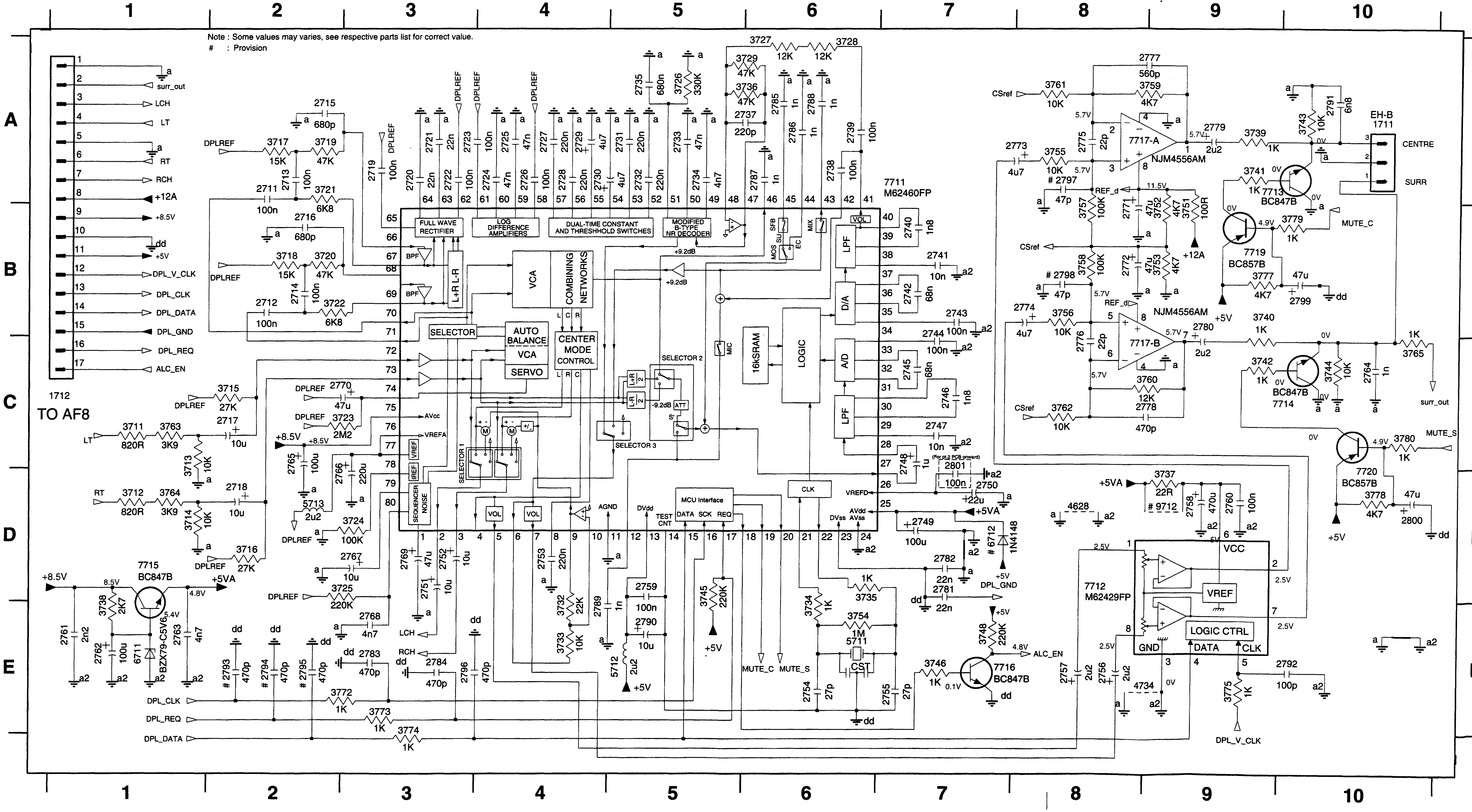
DPL BOARD - CHIP LAYOUT


1
2
A
B
C
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
7711
7712
7717
3139 113 3426 pt1 dd wk0009

2715	A2
2716	A1
2719	A2
2720	A2
2721	A2
2722	A2
2723	A2
2724	A2
2725	A2
2726	A2
2733	A2
2734	A2
2737	A2
2738	A2
2739	A2
2740	A2
2741	B2
2746	B2
2747	B2
2753	A1
2754	B2
2755	B2
2759	B1
2760	C1
2761	B2
2763	B2
2764	C2
2768	A1
2775	C1
2776	C1
2777	C2
2778	C2
2781	B1
2782	B1
2783	B1
2784	B1
2785	A2
2786	A2
2787	A2
2788	A2
2789	B1
2791	C2
2792	C1
2793	B1
2794	B1
2795	B1
2796	B1
2797	C1
2798	C1
3711	A1
3712	A1
3713	A1
3714	A1
3715	A1
3716	A1
3717	A1
3718	A1
3719	A1
3720	A1
3721	A1
3722	A1
3723	A1
3724	A1
3725	A1
3726	A2
3727	A2
3728	A2
3729	A2
3732	B1
3733	A1
3734	B2
3735	B2
3736	A2
3738	B2
3739	C2
3740	C2
3741	C2
3742	C2
3743	C2
3744	C2
3745	B1
3746	B2
3748	B1
3753	C1
3754	B2
3755	C1
3756	C1
3757	C1
3758	C1
3759	C2
3760	C2
3761	C1
3762	C1
3763	A1
3764	A1
3765	C2
3772	B1
3773	B1
3774	B1
3775	C1
3777	C1
3778	C1
3779	B2
3780	B2
4621	A1
4622	A1
4623	B1
4624	B1
4625	C2
4628	A2
4629	A1
4630	B1
4721	A2
4722	A1
4723	A1
4724	A1
4725	A1
4726	A1
4727	A1
4728	A1
4729	B1
4730	C2
4731	C1
4732	B1
4733	B1
4734	C1
4735	C1
4736	C2
4737	B2
4738	A1
4739	A1
5713	A1
7711	A2
7712	C1
7713	C2
7714	C2
7715	B2
7716	B1
7717	C1
7719	C1
7720	C2

DPL CIRCUIT DIAGRAM

1711 A10	2718 D2	2727 A4	2737 A6	2746 C7	2755 E7	2764 C10	2773 A8	2782 D7	2791 A10	2800 D10	3718 B2	3727 A6	3738 E1	3748 E7	3759 A9	3774 E3	5712 E5	7716 E7
1712 C1	2719 A3	2728 A4	2738 A6	2747 C7	2756 E8	2765 C2	2774 B8	2783 E3	2792 E10	2801 C7	3719 A2	3728 A6	3739 A9	3751 B9	3760 C9	3775 E9	5713 D2	7717-A A8
2711 A2	2720 A3	2729 A4	2739 A6	2748 C7	2757 E8	2766 D3	2775 A8	2784 E3	2793 E2	3711 C1	3720 B2	3729 A6	3740 B9	3752 B9	3761 A8	3777 B9	6711 E1	7717-B C8
2712 B2	2721 A3	2730 A4	2740 B7	2749 D7	2758 D9	2767 D3	2776 C8	2785 A6	2794 E2	3712 D1	3721 A2	3732 E4	3741 A9	3753 B9	3762 C8	3778 D10	6712 D7	7719 B9
2713 A2	2722 A3	2731 A5	2741 B7	2750 D7	2759 D5	2768 E3	2777 A9	2786 A6	2795 E2	3713 C1	3722 B2	3733 E4	3742 C9	3754 E6	3763 C1	3779 B10	7711 A7	7720 D10
2714 B2	2723 A3	2732 A5	2742 B7	2751 D3	2760 D9	2769 D3	2778 C9	2787 A6	2796 E3	3714 D1	3723 C3	3734 E6	3743 A10	3755 A8	3764 D1	3780 C10	7712 D8	9712 D9
2715 A2	2724 A4	2733 A5	2743 B7	2752 D3	2761 E1	2770 C2	2779 A9	2788 A6	2797 A8	3715 C2	3724 D3	3735 D6	3744 C10	3756 B8	3765 C10	4628 D8	7713 A9	
2716 B2	2725 A4	2734 A5	2744 B7	2753 D4	2762 E1	2771 B8	2780 B9	2789 E4	2798 B8	3716 D2	3725 D3	3736 A6	3745 D5	3757 B8	3772 E3	4734 E9	7714 C9	
2717 C2	2726 A4	2735 A5	2745 C7	2754 E6	2763 E1	2772 B8	2781 D7	2790 E5	2799 B10	3717 A2	3726 A5	3737 D9	3746 E7	3758 B8	3773 E3	5711 E6	7715 D1	


Note : Some values may varies, see respective parts list for correct value.

# : Provision

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
1712
TO AF8
surr_out
LCH
LT
RT
RCH
+12A
+8.5V
dd
+5V
DPL_V_CLK
DPL_CLK
DPL_DATA
DPL_GND
DPL_REQ
ALC_EN
DPLREF
7711
M62460FP
FULL WAVE RECTIFIER
LOG DIFFERENCE AMPLIFIERS
DUAL-TIME CONSTANT AND THRESHHOLD SWITCHES
MODIFIED B-TYPE NR DECODER
BPF
L+R
L-R
VCA
COMBINING NETWORKS
SELECTOR
AUTO BALANCE
CENTER MODE CONTROL
SERVO
SELECTOR 1
SELECTOR 2
SELECTOR 3
SEQUENCER NOISE
VREF
IREF
VOL
AGND
DVdd
TEST CNT
MCU Interface
DATA SCK REQ
16KSRAM
LOGIC
LPF
D/A
A/D
CLK
MIC
MIX
VREFD
AVdd
DVss AVss
-9.2dB
+9.2dB
ATT
7715
BC847B
BZX79-C5V6
6711
7716
BC847B
5711
CST
7717-A
7717-B
NJM4556AM
7713
7714
BC847B
7719
7720
BC857B
CSref
REF_d
EH-B
1711
CENTRE
SURR
MUTE_C
MUTE_S
+5VA
6712
1N4148
7712
M62429FP
VCC
LOGIC CTRL
GND

ELECTRICAL PARTS LIST - DPL BOARD

MISCELLANEOUS

1712	482226710871	Flex Connector 17P

CAPACITORS

2711	532212142386	100nF 5% 63V
2712	532212142386	100nF 5% 63V
2713	532212142386	100nF 5% 63V
2714	532212142386	100nF 5% 63V
2715	482212232535	680pF 10% 63V
2716	482212232535	680pF 10% 63V
2717	482212440248	10µF 20% 63V
2718	482212440248	10µF 20% 63V
2719	482212614585	100nF 10% 50V
2720	532212232654	22nF 10% 63V
2721	532212232654	22nF 10% 63V
2722	482212614585	100nF 10% 50V
2723	482212614585	100nF 10% 50V
2724	482212613751	47nF 10% 63V
2725	482212613751	47nF 10% 63V
2726	482212614585	100nF 10% 50V
2727	482212142408	220nF 5% 63V
2728	482212142408	220nF 5% 63V
2729	482212440769	4,7µF 20% 100V
2730	482212440769	4,7µF 20% 100V
2731	482212142408	220nF 5% 63V
2732	482212142408	220nF 5% 63V
2733	482212613751	47nF 10% 63V
2734	532212610223	4,7nF 10% 63V
2735	532212142498	680nF 5% 63V
2737	482212233575	220pF 5% 63V
2738	482212614585	100nF 10% 50V
2739	482212614585	100nF 10% 50V
2740	482212610847	1,8nF 10% 63V
2741	532212234098	10nF 10% 63V
2742	482212110684	68nF 10% 50V
2743	532212142386	100nF 5% 63V
2744	532212142386	100nF 5% 63V
2745	482212110684	68nF 10% 50V
2746	482212610847	1,8nF 10% 63V
2747	532212234098	10nF 10% 63V
2748	482212421913	1µF 20% 63V
2749	482212441584	100µF 20% 10V
2750	482212481151	22µF 50V
2751	482212440248	10µF 20% 63V
2752	482212440248	10µF 20% 63V
2753	482212613561	220nF 10% 16V
2754	482212613691	27pF 1% 63V
2755	482212613691	27pF 1% 63V
2756	482212422652	2,2µF 20% 50V
2757	482212422652	2,2µF 20% 50V
2758	482212480195	470µF 20% 10V
2759	482212614585	100nF 10% 50V
2760	482212614585	100nF 10% 50V
2761	482212233127	2,2nF 10% 63V
2762	482212441584	100µF 20% 10V
2763	532212610223	4,7nF 10% 63V
2764	532212610511	1nF 5% 50V
2765	482212440207	100µF 20% 25V
2766	482212440196	220µF 20% 16V
2767	482212440248	10µF 20% 63V
2768	532212610223	4,7nF 10% 63V
2769	482212440433	47µF 20% 25V
2770	482212440433	47µF 20% 25V
2771	482212441751	47µF 20% 50V
2772	482212441751	47µF 20% 50V
2773	482212440769	4,7µF 20% 100V
2774	482212440769	4,7µF 20% 100V
2775	532212232658	22pF 5% 50V
2776	532212232658	22pF 5% 50V
2777	482212233173	560pF 10% 50V
2778	532212234099	470pF 10% 63V
2779	482212422652	2,2µF 20% 50V
2780	482212422652	2,2µF 20% 50V
2781	532212232654	22nF 10% 63V
2782	532212232654	22nF 10% 63V
2783	532212234099	470pF 10% 63V
2784	532212234099	470pF 10% 63V
2785	532212610511	1nF 5% 50V
2786	532212610511	1nF 5% 50V
2787	532212610511	1nF 5% 50V
2788	532212610511	1nF 5% 50V
2789	532212610511	1nF 5% 50V
2790	482212440248	10µF 20% 63V
2791	532212231866	6,8nF 10% 63V
2792	532212232531	100pF 5% 50V
2796	532212234099	470pF 10% 63V
2799	482212440433	47µF 20% 25V
2800	482212440433	47µF 20% 25V

RESISTORS

3711	482211711454	820R 1% 0,1W
3712	482211711454	820R 1% 0,1W
3713	482211710833	10k 1% 0,1W
3714	482211710833	10k 1% 0,1W
3715	482205120273	27k 5% 0,1W
3716	482205120273	27k 5% 0,1W
3717	482211683933	15k 1% 0,1W
3718	482211683933	15k 1% 0,1W
3719	482211710834	47k 1% 0,1W
3720	482211710834	47k 1% 0,1W
3721	482211711507	6k8 1% 0,1W
3722	482211711507	6k8 1% 0,1W
3723	482205120225	2M2 5% 0,1W
3724	482211710837	100k 1% 0,1W
3725	482211713579	220k 1% 0,1W

ELECTRICAL PARTS LIST - DPL BOARD

3726	482205120334	330k 5% 0,1W
3727	482211711383	12k 1% 0,1W
3728	482211711383	12k 1% 0,1W
3729	482211710834	47k 1% 0,1W
3732	482205120223	22k 5% 0,1W
3733	482211710833	10k 1% 0,1W
3734	482205110102	1k 2% 0,25W
3735	482205110102	1k 2% 0,25W
3736	482211710834	47k 1% 0,1W
3737	482211652186	22R 5% 0,5W
3738	482211712955	2k7 1% 0,1W
3739	482205110102	1k 2% 0,25W
3740	482205110102	1k 2% 0,25W
3741	482205110102	1k 2% 0,25W
3742	482205110102	1k 2% 0,25W
3743	482211710833	10k 1% 0,1W
3744	482211710833	10k 1% 0,1W
3745	482211713579	220k 1% 0,1W
3746	482205110102	1k 2% 0,25W
3748	482211713579	220k 1% 0,1W
3751	482211652175	100R 5% 0,5W
3752	482211652283	4k7 5% 0,5W
3753	482205120472	4k7 5% 0,1W
3754	482205120105	1M 5% 0,1W
3755	482211710833	10k 1% 0,1W
3756	482211710833	10k 1% 0,1W
3757	482211710837	100k 1% 0,1W
3758	482211710837	100k 1% 0,1W
3759	482205120472	4k7 5% 0,1W
3760	482211711383	12k 1% 0,1W
3761	482211710833	10k 1% 0,1W
3762	482211710833	10k 1% 0,1W
3763	482205120392	3k9 5% 0,1W
3764	482205120392	3k9 5% 0,1W
3765	482205110102	1k 2% 0,25W
3772	482205110102	1k 2% 0,25W
3773	482205110102	1k 2% 0,25W
3774	482205110102	1k 2% 0,25W
3775	482205110102	1k 2% 0,25W
3777	482205120472	4k7 5% 0,1W
3778	482205120472	4k7 5% 0,1W
3779	482205110102	1k 2% 0,25W
3780	482205110102	1k 2% 0,25W
4621	482205120008	0R Jumper 0805
4622	482205120008	0R Jumper 0805
4623	482205120008	0R Jumper 0805
4624	482205120008	0R Jumper 0805
4625	482205120008	0R Jumper 0805
4628	482205120008	0R Jumper 0805
4629	482205120008	0R Jumper 0805
4630	482205120008	0R Jumper 0805
4721	482205120008	0R Jumper 0805
4722	482205120008	0R Jumper 0805
4723	482205120008	0R Jumper 0805
4724	482205120008	0R Jumper 0805
4725	482205120008	0R Jumper 0805
4726	482205120008	0R Jumper 0805
4727	482205120008	0R Jumper 0805
4728	482205120008	0R Jumper 0805
4729	482205120008	0R Jumper 0805
4730	482205120008	0R Jumper 0805
4731	482205120008	0R Jumper 0805
4732	482205120008	0R Jumper 0805
4733	482205120008	0R Jumper 0805
4734	482205120008	0R Jumper 0805
4735	482205120008	0R Jumper 0805
4736	482205120008	0R Jumper 0805
4737	482205120008	0R Jumper 0805
4738	482205120008	0R Jumper 0805
4739	482205120008	0R Jumper 0805

COILS & FILTERS

5711	482224272527	RES CER 4MHz
5712	482215762552	Coil 2,2µH 5%
5713	482215710586	Coil 2,2µH 10%

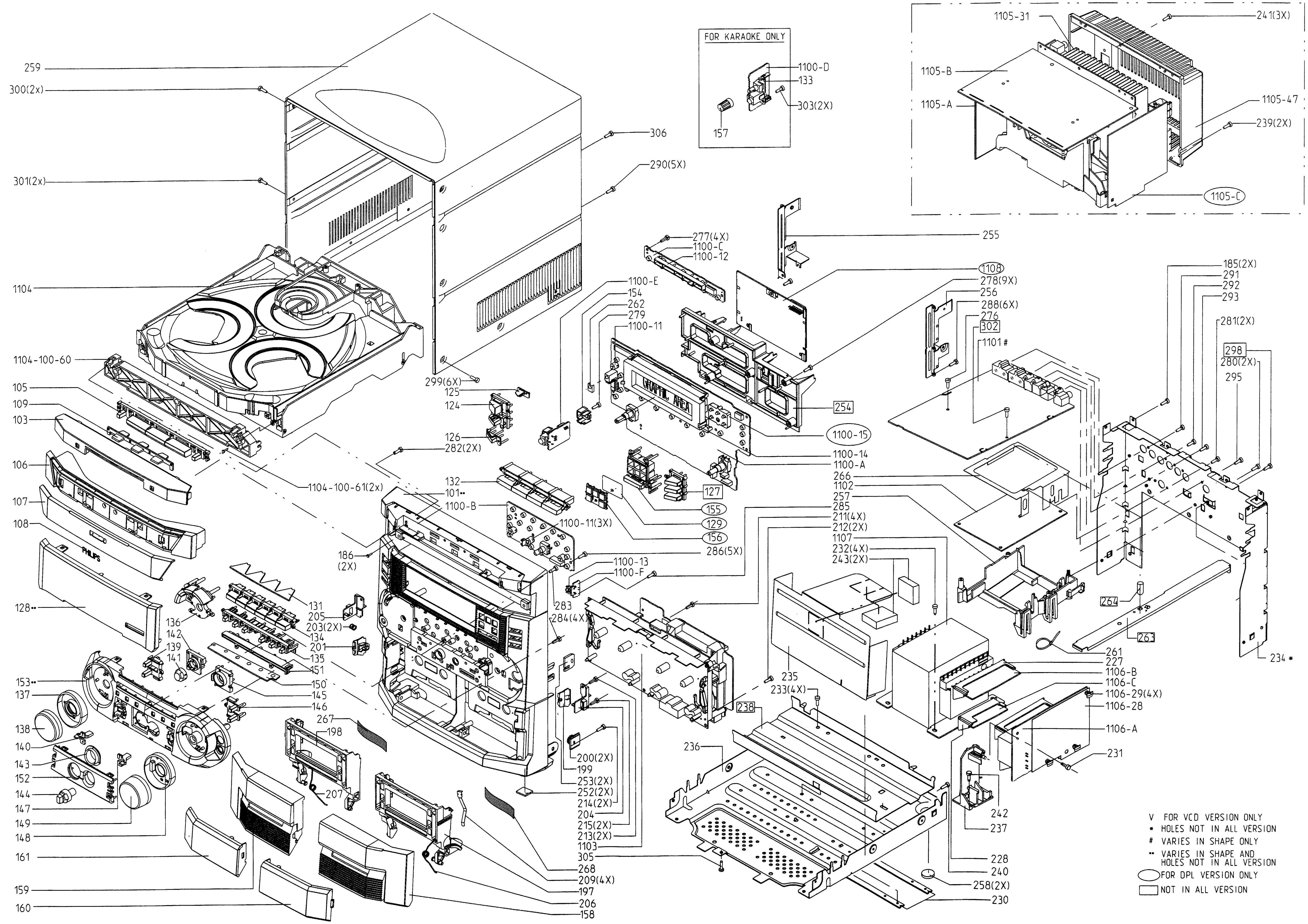
DIODES

6711	482213034173	BZX79-C5V6

TRANSISTORS & INTEGRATED CIRCUITS

7711	482220917347	M62460FP
7712	482220917349	M62429FP
7713	482213060511	BC847B
7714	482213060511	BC847B
7715	482213060511	BC847B
7716	482213060511	BC847B
7717	482220931378	NJM4556AM
7719	482213060373	BC857B
7720	482213060373	BC857B

Note : Only the parts mentioned in this list are normal service spare parts.


FOR KARAOKE ONLY
1100-D
133
303(2X)
157
1105-31
241(3X)
1105-B
1105-A
1105-47
239(2X)
1105-C
259
300(2x)
306
301(2x)
290(5X)
1104
1104-100-60
105
109
103
106
107
108
128**
299(6X)
125
124
126
282(2X)
1104-100-61(2x)
132
101**
1100-B
1100-11(3X)
186
(2X)
131
205
203(2X)
134
201
135
151
150
145
146
136
142
139
141
153**
137
138
140
143
152
144
147
149
148
161
159
160
267
198
207
197
206
158
268
209(4X)
283
284(4X)
200(2X)
199
253(2X)
252(2X)
214(2X)
204
215(2X)
213(2X)
1103
305
277(4X)
1100-C
1100-12
1100-E
154
262
279
1100-11
GRAPHIC AREA
255
1108
278(9X)
256
288(6X)
276
302
1101#
254
1100-15
1100-14
1100-A
127
155
129
156
266
1102
257
285
211(4X)
212(2X)
1107
232(4X)
243(2X)
286(5X)
1100-13
1100-F
185(2X)
291
292
293
281(2X)
298
280(2X)
295
264
263
261
227
1106-B
1106-C
1106-29(4X)
1106-28
1106-A
231
234*
235
233(4X)
238
236
242
237
228
240
258(2X)
230
PHILIPS

V FOR VCD VERSION ONLY
* HOLES NOT IN ALL VERSION
# VARIES IN SHAPE ONLY
** VARIES IN SHAPE AND HOLES NOT IN ALL VERSION
○ FOR DPL VERSION ONLY
☐ NOT IN ALL VERSION

MECHANICAL & ACCESSORIES PARTS LIST - MAIN UNIT

0101	313911811530	Cabinet Front /P88/22
0101	313911811520	Cabinet Front /P88/37
0101	313911811350	Cabinet Front /C83/22,C85/22/34
0101	313911811040	Cabinet Front /C85/37
0103	313911811050	Cover Orn CDC
0105	313911811060	Button Set CDC
0106	313911811070	Cover Tray CDC
0107	313911811080	Cover Orn CDC Tray
0108	482245413408	Badge Philips
0124	313911811090	Button Power/Standby
0126	313911469060	Window IR
0127	313911811100	But RDS/NEWS/DOLBY
0128	313911812390	Window Display /P88/22
0128	313911811540	Window Display /P88/37
0128	313911811390	Window Display /C83/22
0128	313911812350	Window Display /C85/22/34
0128	313911811120	Window Display /C85/37
0132	313911811130	Button Set Source
0134	313911811140	Button Set Control
0135	313911811150	Button Tape/Mode
0136	313911811160	Button BT/VEC/DSC/Personal
0137	313911811170	Ring Orn Jog Rotary
0138	313911811110	Knob Jog Rotary
0139	313911811180	Button Set Bass
0141	313911811190	Button WOOX Plus Chrome
0142	313911468900	Frame Button Set WOOX
0144	313911811200	Knob Rotary WOOX Chrome
0145	313911469890	Guide Rotary WOOX
0146	313911811210	Button Set Treble
0148	313911811220	Ring Orn Volume Rotary
0149	313911811230	Knob Volume Rotary
0151	313911469070	Holder Lightguide Bar
0152	313911811250	Cover Orn WOOX
0152	313911811450	Cover Orn WOOX /C83/22
0153	313911811260	Cover Orn Control
0155	313911811550	Button Set DPL
0158	313911812180	Cover Cassette Right DOLBY
0158	313911811270	Cover Cassette Right /37
0159	313911812620	Cover Cassette Left Estar
0160	313911469120	Lens Cassette Right
0161	313911469130	Lens Cassette Left
0197	313911468630	Door Cassette Right
0198	313911468620	Door Cassette Left
0199	482240210621	Push-Catch
0200	482252910322	Damper Assembly
0201	313911468640	Push Catch Left
0203	482249211344	Spring Compression
0204	482240211246	Bracket Right
0205	482240211245	Bracket Left
0206	313911101380	Spring Torsion Right
0207	313911101390	Spring Torsion Left
0209	482249242787	Spring Cassette
0252	482246240683	Foot Rubber (SQ)
0254	313911469140	Plate Front
0258	482246240683	Plate (Foot)
0259	313911469230	Cabinet Rear
0350	313911877530	L/R Loudspeaker Box /P88/22
0350	313911877710	L/R Loudspeaker Box /P88/37
0350	313911877630	L/R Loudspeaker Box /C83/22
0350	313911877520	L/R Loudspeaker Box /C85/22
0350	313911877500	L/R Loudspeaker Box /C85/34/37
0351	482230350063	FM Aerial
0351	482232011094	FM Aerial /37
0352	313911877560	Center/Surr. Speaker /P88/22/37
0356	313922884360	Remote Control /P88/22/37
0356	313922884370	Remote Control
0384	482230350082	AM Frame Aerial
0385	482232110249	⚠ Mains Cord
0385	482232111466	⚠ Mains Cord /37
0387	313911619720	Instruction For Use /P88/22
0387	313911619710	Instruction For Use /P88/37
0387	313911619610	Instruction For Use /C83/22,C85/22
0387	313911619600	Instruction For Use /C85/34
0387	313911619590	Instruction For Use /C85/37
1107	482214611188	⚠ Mains Transformer /P88/22,C83/22
1107	482214611177	⚠ Mains Transformer /P88/37
1107	310330830450	⚠ Mains Transformer /C85/22/34
1107	310330830440	⚠ Mains transformer /C85/37
1200	313911034570	FFC Foil 23P/280/23P BD /P88/22/37
1200	313911034560	FFC Foil 19P/280/19P BD
1201	313911034570	FFC Foil 23P/280/23P BD
1201	313911034560	FFC FOIL 19P/280/19P BD /37
1202	313911034330	FFC Foil 06P/180/06P BD
1203	313911034580	FFC Foil 04P/280/04P AD
1204	313911034680	FFC Foil 06P/340/06P BD
1205	482232012752	FFC Foil 07P/180/07P AD
1206	313911034600	FFC Foil 07P/280/07P AD
1207	313911034550	FFC Foil 17P/140/17P BD
1208	313911034630	FFC Foil 10P/180/10P AD

Note : Only the parts mentioned in this list are normal service spare parts.

SCREW LISTS - MAIN UNIT

185	D3 x 10
186	D3 x 25
211	D3 x 12
212	D3 x 12
213	D3 x 12
214	M3 x 12
215	M3 x 12
231	D3 x 10
232	M3 x 10
233	M3 x 6
239	M3 x 10
240	D3 x 12
241	M3 x 10
242	M3 x 10
276	D3 x 12
277	D3 x 12
278	D3 x 12
279	D3 x 12
280	D3 x 12
281	D3 x 12
282	D3 x 12
283	D3 x 20
284	D3 x 12
285	M3 x 12
286	D3 x 12
288	D3 x 12
290	M3 x 10
291	D3 x 12
292	D3 x 12
293	D3 x 12
295	D3 x 12
298	M3 x 10
299	M3 x 10
300	M3 x 10
301	M3 x 10
302	M3 x 16
305	M3 x 6
306	M3 x 10

FW-C83 & FW-C85 & FW-P88

A00 - 159

Service
Service
Service

Product Service Group CE Audio

Service Information

Already published Service Informations :

CORRECTION TO SERVICE MANUAL

* Correction of parts list (Page 14-2) for **MAIN UNIT:**

Change	0350	9073 100 09862	L/R Loudspeaker Box (For FW-C85/22 only)
Change	0350	9073 100 09859	L/R Loudspeaker Box (For FW-P88/22 only)
Delete	0254	(Not for FW-P88/22/37)	

* Correction of circuit drawing and parts list for **AF8 Board:**

Change	2532	4822 124 40248	10µF 20% 63V
	2885	4822 124 40769	4,7µF 20% 100V
Add	4525	4822 051 20008	0R Jumper 0805
	4526	4822 051 20008	0R Jumper 0805

* Correction of circuit drawing and parts list for **DPL Board** (For FW-P88/22/37 only):

Change	2742	5322 121 42465	68nF 5% 63V
	2745	5322 121 42465	68nF 5% 63V

* Correction of Mechanical parts list (Page 11-11). Below are the correct Item No. and Description:

401	4822 256 10555	Rucksack - L/R and Matrix Surr.
401	4822 256 10557	Rucksack - L/R and C/S
401	4822 256 10558	Rucksack - L/R
0002	4822 256 10556	Holder STK407/P5-VA

* Correction of Mechanical parts list (Page 11A-11). Below are the correct Item No. and Description:

401	4822 256 10557	Rucksack - L/R and C/S
401	4822 256 10558	Rucksack - L/R

ADDITION TO SERVICE MANUAL

* Selected spare parts are now available for the Left & Right Loudspeaker Boxes (See Picture 1 and 2).

2499 297 22506	2,5" Tweeter	/C83/22 , C85/22/34/37
2499 297 22606	2,5" Tweeter	/P88/22/37
2499 297 66306	6,5" Woofer	/C83/22
2499 297 66406	6,5" Woofer	/P88/22
2499 297 66506	6,5" Woofer	/P88/37
2499 297 66606	6,5" Woofer	/C85/22/34/37
8299 297 80007	Woox Driver	/C83/22 , P88/22
8299 297 80008	Woox Driver	/C85/22/34/37 , P88/37
4822 325 50229	Grommet	
4399 294 14371	Woofer Ring	
4399 294 14401	Woox Ring	/C83/22 , P88/22/37
4399 294 14551	Woox Ring	/C85/22/34/37
4399 294 14391	Woox Drum	/C83/22 , P88/22/37
4399 294 14571	Woox Drum	/C85/22/34/37
4399 294 14581	Lens	/C85/22/34/37
4399 294 80352	Grommet	
8299 297 50183	Woox Cloth Frame Assembly	
8299 297 50184	Speaker Cloth Frame Assembly	

* Selected spare parts are now available for the Center Speaker Box.

9965 000 03230	Speaker 4" 12R 40W /FW-P88/22/37

* Selected spare parts are now available for the Surround Speaker Box.

4822 240 10389	Speaker 4" 6R 20W /FW-P88/22/37

CHANGES DURING PRODUCTION

FRONT BOARD

* From production week 0014 onwards the following has been changed to remove oscillator shift circuit.

Delete 2252, 7212

* From production week 0017 onwards pt.2 Board (identified by the last digit of the 12NC - 3139 113 34242) is introduced. For this reason new layout and circuit drawing are enclosed.

Reason : To create +F for Tape module and for ESD solution.

Add	2302	5322 126 10733	680pF 5% 50V
	4406	4822 051 20008	0R Jumper 0805
	6227	4822 130 30621	1N4148
Change	3315	4822 051 20471	470R 5% 0,1W
Delete	2405		

Reason : To adjust the karaoke level.

Add	4605	4822 051 20008	0R Jumper 0805
Change	3604	4822 051 20392	3k9 5% 0,1W
Delete	3600		

(For FW-C85/21/21M only)

(P.T.O.)

- From production week 0026 onwards the following has been changed to solve CD Text cannot read problem.

  Delete 3364

- From production week 0035 onwards pt.3 Board (identified by the last digit of the 12NC - 3139 113 34243) is introduced. For this reason new layout are enclosed. For service existing pt.2 circuit drawing can be used.

  Reason : Process improvement for 0603 SMC.

Add	3379	4822 116 52195	47R 5% 0,5W
Delete	3303		

AF8 BOARD

- From production week 0012 onwards the following has been changed for ESD solution.

  Change 2865 4822 122 33177 10nF 20% 50V

- From production week 0014 onwards pt.2 Board (identified by the last digit of the 12NC - 3139 113 34252) is introduced. For this reason new layout and circuit drawing are enclosed.

  Reason : To reduce Tape hum and for ESD solution.

Add	2887	4822 124 80144	220µF 20% 25V
	2889	4822 124 40248	10µF 20% 63V

  Add 2888 4822 126 14585 100nF 10% 50V
  (For FW-P88/22/37 only)

- From production week 0038 onwards pt.3 Board (identified by the last digit of the 12NC - 3139 113 34253) is introduced. For this reason new layout are enclosed. For service existing pt.2 circuit drawing can be used.

  Reason : Process improvement for 0603 SMC.

3CDC-LC MODULE

- From production week 0016 onwards a new CD board (3103 303 34522) is introduced as an alternative to supplement for the shortage of Servo IC TDA7073A. For this reason new layout, circuit drawing and electrical parts list are enclosed (Page 10A-1 to 10A-7).

ETF7 TAPE MODULE

- From production week 0021 onwards the following has been changed to improve ESD.

Add	3687	4822 117 11503	220R 1% 0,1W
Delete	2624, 4785		

DPL BOARD (For FW-P88/22/37 only)

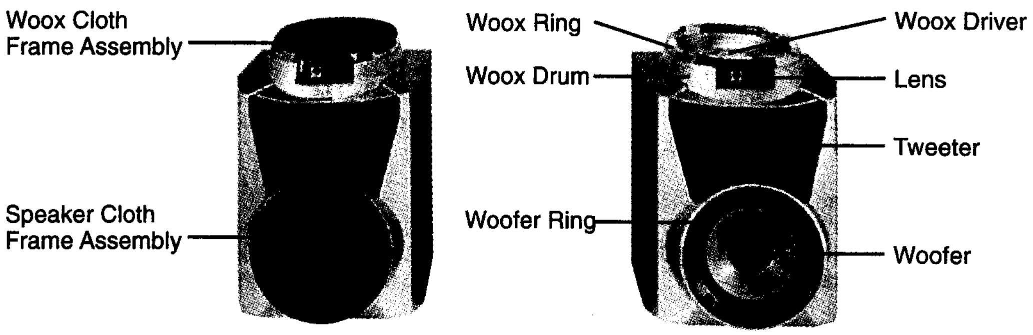
- From production week 0017 onwards pt.2 Board (identified by the last digit of the 12NC - 3139 113 34262) is introduced. For this reason new layout and circuit drawing are enclosed.

  Reason : To eliminate 'plop' from the Center and Surround speakers and for ESD solution.

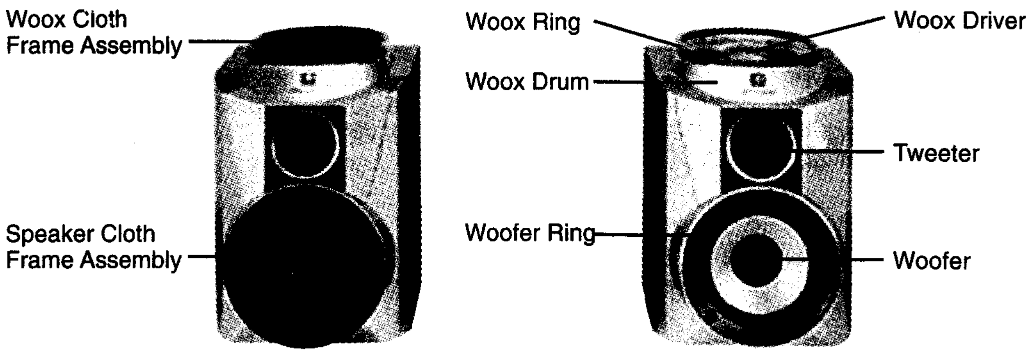
Add	2801	4822 126 14585	100nF 10% 50V
Change	2790	4822 124 81044	470µF 20% 6,3V
	2799	4822 124 40248	10µF 20% 63V
	2800	4822 124 40248	10µF 20% 63V
	3777	4822 117 10833	10k 1% 0,1W
	3778	4822 117 10833	10k 1% 0,1W
	3779	4822 051 20101	100R 5% 0,1W
	3780	4822 051 20101	100R 5% 0,1W

- From production week 0027 onwards pt.3 Board (identified by the last digit of the 12NC - 3139 113 34263) is introduced. For this reason new layout are enclosed. For service existing pt.2 circuit drawing can be used.

  Reason : Process improvement for 0603 SMC.



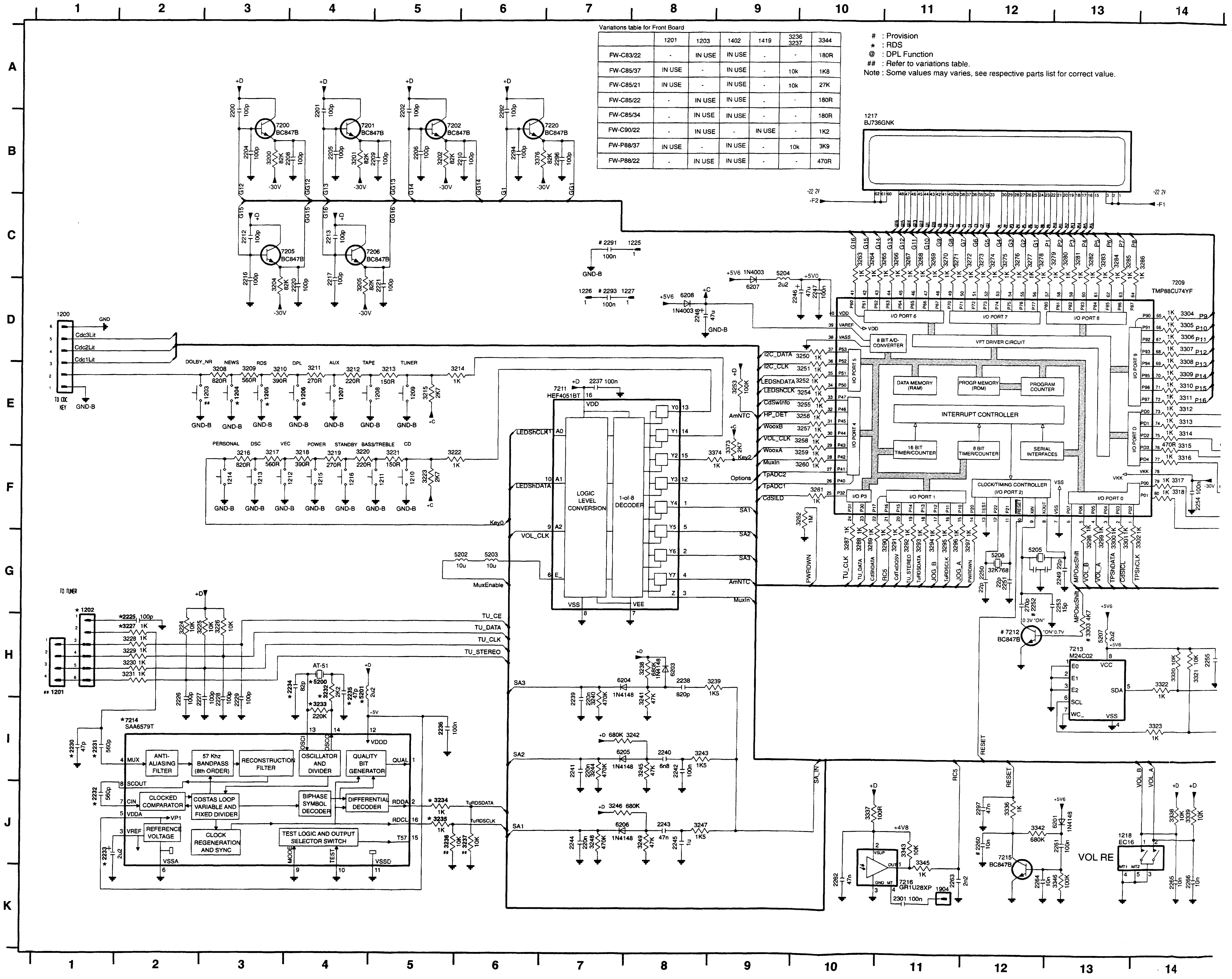
Picture 1



Picture 2

FRONT BOARD - CIRCUIT DIAGRAM

1200 D1
1201 H1
1202 G1
1203 E3
1204 E3
1205 E3
1206 E4
1207 E4
1208 E5
1209 E5
1210 F5
1211 F5
1212 F4
1213 F3
1214 F3
1215 F4
1216 F4
1217 B10
1218 J13
1219 J15
1220 C21
1221 D21
1222 E21
1223 H21
1224 I21
1225 C8
1226 D7
1227 D8
1902 K20
1903 K20
1904 K11
2200 B3
2201 B4
2202 B5
2204 B3
2205 B4
2206 B5
2208 B4
2209 B5
2210 B6
2212 C3
2213 C4
2216 D3
2217 D4
2220 D4
2221 D5
2225 H2
2226 I2
2227 I3
2228 I3
2229 I3
2230 I1
2231 I1
2232 J1
2233 J1
2234 H4
2235 H4
2236 I5
2237 E7
2238 H8
2239 I7
2240 I8
2241 I7
2242 I8
2243 J8
2244 J7
2245 J8
2246 D9
2247 D10
2248 D8
2249 G13
2250 G12
2251 G12
2252 G12
2253 G13
2254 F14
2255 H14
2256 A17
2257 B15
2258 D17
2259 D15
2260 J12
2261 J13
2262 K10
2263 K11
2264 K12
2265 K14
2266 K14
2267 K16
2268 K16
2269 D19
2270 D20
2271 D20
2272 D20
2273 F20
2274 F20
2275 G20
2276 G19
2277 H19
2278 H20
2279 J17
2280 J19
2281 K17
2282 K17
2283 K19
2284 K20
2285 K20
2286 A17
2287 D17
2288 G15
2289 G17
2290 G17
2291 C7
2292 B6
2293 D7
2294 B6
2296 B7
2297 J12
2298 G20
2299 G20
2300 G20
2301 K11
2302 E16
3200 B3
3201 B4
3202 B5
3204 D3
3205 D4
3208 E3
3209 E3
3210 E3
3211 E4
3212 E4
3213 E5
3214 E5
3215 E5
3216 F3
3217 F3
3218 F4
3219 F4
3220 F4
3221 F5
3222 F5
3223 F5
3224 H2
3225 H3
3226 H3
3227 H2
3228 H2
3229 H2
3230 H2
3231 H2
3232 H4
3233 I4
3234 J5
3235 J5
3236 J5
3237 J6
3238 H8
3239 H9
3240 I7
3241 I8
3242 I8
3243 I8
3244 I7
3245 I8
3246 J7
3247 J8
3248 J7
3249 J8
3250 D10
3251 E10
3252 E10
3253 E9
3254 E10
3255 E10
3256 E10
3257 E10
3258 E10
3259 F10
3260 F10
3261 F10
3262 F10
3263 C10
3264 C10
3265 C11
3266 C11
3267 C11
3268 C11
3269 C11
3270 C11
3271 C11
3272 C12
3273 C12
3274 C12
3275 C12
3276 C12
3277 C12
3278 C12
3279 C13
3280 C13
3281 C13
3282 C13
3283 C13
3284 C13
3285 C13
3286 C14
3287 G10
3288 G10
3289 G10
3290 G11
3291 G11
3292 G11
3293 G11
3294 G11
3295 G11
3296 G11
3297 G12
3298 G13
3299 G13
3300 G13
3301 G13
3302 G14
3303 H13
3304 D14
3305 D14
3306 D14
3307 D14
3308 D14
3309 E14
3310 E14


1
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12
13
14
A
B
C
D
E
F
G
H
I
J
K
1217
BJ736GNK
7209
TMP88CU74YF
I/O PORT 6
I/O PORT 7
I/O PORT 8
I/O PORT 5
I/O PORT 4
I/O PORT 9
I/O PORT 0
I/O P3
I/O PORT 1
8 BIT A/D-CONVERTER
VFT DRIVER CIRCUIT
DATA MEMORY (RAM)
PROGR MEMORY (ROM)
PROGRAM COUNTER
INTERRUPT CONTROLLER
16 BIT TIMER/COUNTER
8 BIT TIMER/COUNTER
SERIAL INTERFACES
CLOCK/TIMING CONTROLLER (I/O PORT 2)
7211
HEF4051BT
LOGIC LEVEL CONVERSION
1-of-8 DECODER
7214
SAA6579T
ANTI-ALIASING FILTER
57 Khz BANDPASS (8th ORDER)
RECONSTRUCTION FILTER
OSCILLATOR AND DIVIDER
QUALITY BIT GENERATOR
CLOCKED COMPARATOR
COSTAS LOOP VARIABLE AND FIXED DIVIDER
BIPHASE SYMBOL DECODER
DIFFERENTIAL DECODER
REFERENCE VOLTAGE
CLOCK REGENERATION AND SYNC
TEST LOGIC AND OUTPUT SELECTOR SWITCH
7213
M24C02
7215
BC847B
7216
GP1U28XP
# 7212
BC847B
7200
7201
7202
7220
7205
7206
BC847B
1200
TO CDC KEY
TO TUNER
1201
1202
1218
EC16
VOL RE
DOLBY_NR
NEWS
RDS
DPL
AUX
TAPE
TUNER
PERSONAL
DSC
VEC
POWER
STANDBY
BASS/TREBLE
CD
GND-B
-30V
+D
+5V6
-22 2V
-F2
-F1
TU_CE
TU_DATA
TU_CLK
TU_STEREO
SA1
SA2
SA3
AmNTC
MuxIn
MuxEnable
Key0
Key2
Options
VOL_CLK
LEDShDATA
LEDShCLRT
I2C_DATA
I2C_CLK
RESET
PWRDWN
AT-51
32K768

Variations table for Front Board

	1201	1203	1402	1419	3236 3237	3344
FW-C83/22	-	IN USE	IN USE	-	-	180R
FW-C85/37	IN USE	-	IN USE	-	10k	1K8
FW-C85/21	IN USE	-	IN USE	-	10k	27K
FW-C85/22	-	IN USE	IN USE	-	-	180R
FW-C85/34	-	IN USE	IN USE	-	-	180R
FW-C90/22	-	IN USE	-	IN USE	-	1K2
FW-P88/37	IN USE	-	IN USE	-	10k	3K9
FW-P88/22	-	IN USE	IN USE	-	-	470R

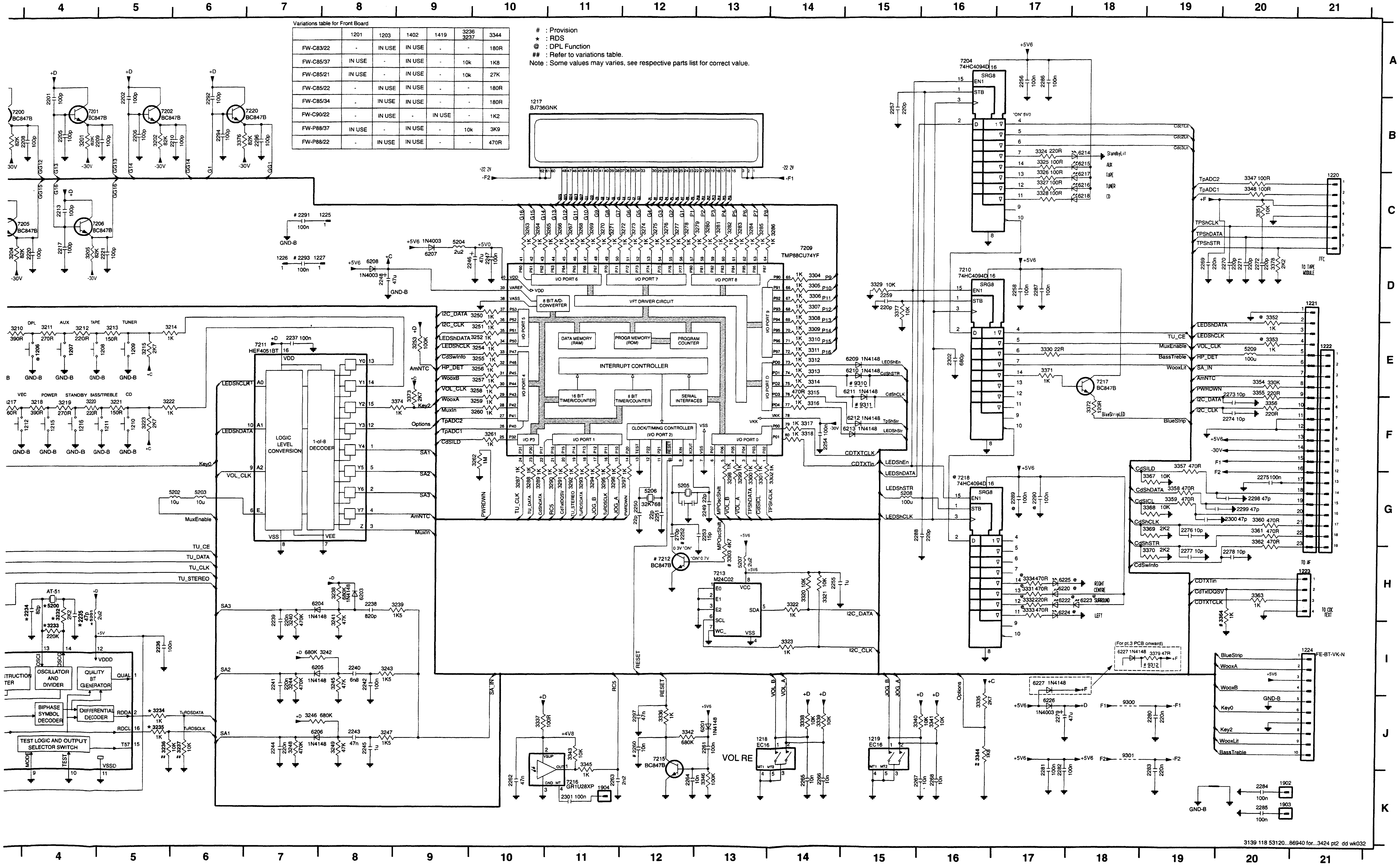
: Provision
* : RDS
@ : DPL Function
: Refer to variations table.
Note : Some values may varies, see respective parts list for correct value.

2228	I3
2229	I3
2230	I1
2231	I1
2232	J1
2233	J1
2234	H4
2235	H4
2236	I5
2237	E7
2238	H8
2239	I7
2240	I8
2241	I7
2242	I8
2243	J8
2244	J7
2245	J8
2246	D9
2247	D10
2248	D8
2249	G13
2250	G12
2251	G12
2252	G12
2253	G13
2254	F14
2255	H14
2256	A17
2257	B15
2258	D17
2259	D15
2260	J12
2261	J13
2262	K10
2263	K11
2264	K12
2265	K14
2266	K14
2267	K16
2268	K16
2269	D19
2270	D20
2271	D20
2272	D20
2273	F20
2274	F20
2275	G20
2276	G19
2277	H19
2278	H20
2279	J17
2280	J19
2281	K17
2282	K17
2283	K19
2284	K20
2285	K20
2286	A17
2287	D17
2288	G15
2289	G17
2290	G17
2291	C7
2292	B6
2293	D7
2294	B6
2296	B7
2297	J12
2298	G20
2299	G20
2300	G20
2301	K11
2302	E16
3200	B3
3201	B4
3202	B5
3204	D3
3205	D4
3208	E3
3209	E3
3210	E3
3211	E4
3212	E4
3213	E5
3214	E5
3215	E5
3216	F3
3217	F3
3218	F4
3219	F4
3220	F4
3221	F5
3222	F5
3223	F5
3224	H2
3225	H3
3226	H3
3227	H2
3228	H2
3229	H2
3230	H2
3231	H2
3232	H4
3233	I4
3234	J5
3235	J5
3236	J5
3237	J6
3238	H8
3239	H9
3240	I7
3241	I8
3242	I8
3243	I8
3244	I7
3245	I8
3246	J7
3247	J8
3248	J7
3249	J8
3250	D10
3251	E10
3252	E10
3253	E9
3254	E10
3255	E10
3256	E10
3257	E10
3258	E10
3259	F10
3260	F10
3261	F10
3262	F10
3263	C10
3264	C10
3265	C11
3266	C11
3267	C11
3268	C11
3269	C11
3270	C11
3271	C11
3272	C12
3273	C12
3274	C12
3275	C12
3276	C12
3277	C12
3278	C12
3279	C13
3280	C13
3281	C13
3282	C13
3283	C13
3284	C13
3285	C13
3286	C14
3287	G10
3288	G10
3289	G10
3290	G11
3291	G11
3292	G11
3293	G11
3294	G11
3295	G11
3296	G11
3297	G12
3298	G13
3299	G13
3300	G13
3301	G13
3302	G14
3303	H13
3304	D14
3305	D14
3306	D14
3307	D14
3308	D14
3309	E14
3310	E14
3311	E14
3312	E14
3313	E14
3314	E14
3315	E14
3316	F14
3317	F14
3318	F14
3320	H14
3321	H14
3322	H14
3323	I14
3324	B17
3325	B17
3326	C17
3327	C17
3328	C17
3329	D15
3330	E17
3331	H17
3332	H17
3333	H17
3334	H17
3335	J16
3336	J12
3337	J10
3338	J14
3339	J14
3340	J16
3341	J16
3342	J12
3343	J11
3344	J16
3345	J11
3346	K13
3347	C20
3348	C20
3351	C20
3352	D20
3353	E20
3354	E20
3355	E20
3356	F20
3357	F19
3358	G19
3359	G19
3360	G20
3361	G20
3362	G20
3363	H20
3364	H20
3367	G19
3368	G19
3369	G19
3370	H19
3371	E17
3372	F18
3373	F9
3374	F9
3376	B6
3377	D15
3378	D20
5200	H4
5201	H4
5202	G6
5203	G6
5204	C9
5205	G12
5206	G12
5207	H13
5208	G15
5209	E20
6201	J13
6203	H8
6204	H7
6205	I7
6206	J7
6207	D9
6208	D8
6209	E15
6210	E15
6211	E15
6212	F15
6213	F15
6214	B18
6215	B18
6216	C18
6217	C18
6218	C18
6220	H17
6222	H17
6223	H18
6224	H17
6225	H17
6226	J17
6227	I17
7200	B3
7201	B4
7202	B5
7204	A16
7205	C3
7206	C4
7209	D14
7210	D16
7211	E7
7212	H12
7213	H13
7214	I2
7215	J12
7216	K11
7217	E18
7218	G16
220	B6
900	J18
901	J18
910	E15
911	F15

Variations table for Front Board

	1201	1203	1402	1419	3236 3237	3344
FW-C83/22	-	IN USE	IN USE	-	-	180R
FW-C85/37	IN USE	-	IN USE	-	10k	1K8
FW-C85/21	IN USE	-	IN USE	-	10k	27K
FW-C85/22	-	IN USE	IN USE	-	-	180R
FW-C85/34	-	IN USE	IN USE	-	-	180R
FW-C90/22	-	IN USE	-	IN USE	-	1K2
FW-P88/37	IN USE	-	IN USE	-	10k	3K9
FW-P88/22	-	IN USE	IN USE	-	-	470R

# : Provision
★ : RDS
@ : DPL Function
## : Refer to variations table.
Note : Some values may varies, see respective parts list for correct value.



1217
BJ736GNK
7209
TMP88CU74YF
I/O PORT 6
I/O PORT 7
I/O PORT 8
VFT DRIVER CIRCUIT
8 BIT A/D CONVERTER
DATA MEMORY (RAM)
PROGR.MEMORY (ROM)
PROGRAM COUNTER
INTERRUPT CONTROLLER
16 BIT TIMER/COUNTER
8 BIT TIMER/COUNTER
SERIAL INTERFACES
CLOCK/TIMING CONTROLLER (I/O PORT 2)
I/O PORT 0
I/O PORT 1
I/O P3
I/O PORT 4
I/O PORT 5
I/O PORT 9
I/O PORT D
7211
HEF4051BT
LOGIC LEVEL CONVERSION
1-of-8 DECODER
7204
74HC4094D
7210
74HC4094D
7218
74HC4094D
SRG8
EN1
STB
7213
M24C02
7216
GP1U28XP
7217
BC847B
7215
BC847B
7212
BC847B
7200
BC847B
7201
BC847B
7202
BC847B
7220
BC847B
7205
BC847B
7206
BC847B
AT-51
OSCILLATOR AND DIVIDER
QUALITY BIT GENERATOR
BIPHASE SYMBOL DECODER
DIFFERENTIAL DECODER
TEST LOGIC AND OUTPUT SELECTOR SWITCH
DPL
AUX
TAPE
TUNER
VEC
POWER
STANDBY
BASS/TREBLE
CD
I2C_DATA
I2C_CLK
LEDShDATA
LEDShCLK
CdSwInfo
HP_DET
WooxB
VOL_CLK
WooxA
Muxin
TpADC2
TpADC1
CdSILD
AmNTC
Options
Key2
Key0
MuxEnable
TU_CE
TU_DATA
TU_CLK
TU_STEREO
SA1
SA2
SA3
PWRDWN
RESET
VOL_B
VOL_A
JOG_B
JOG_A
1218
EC16
1219
EC16
VOL RE
StandbyLit
AUX
TAPE
TUNER
CD
RIGHT
CENTRE
SURROUND
LEFT
BlueStripLED
1220
FFC
TO TAPE MODULE
1221
1222
1223
TO AF
TO CDC TEXT
1224
FE-BT-VK-N
BlueStrip
WooxA
WooxB
Key0
Key2
WooxLit
BassTreble
CDTXTin
CdTxtDQSV
CDTXTCLK
For pt.3 PCB onward
1902
1903
1904
GND-B
+5V6
-F1
-F2
A
B
C
D
E
F
G
H
I
J
K
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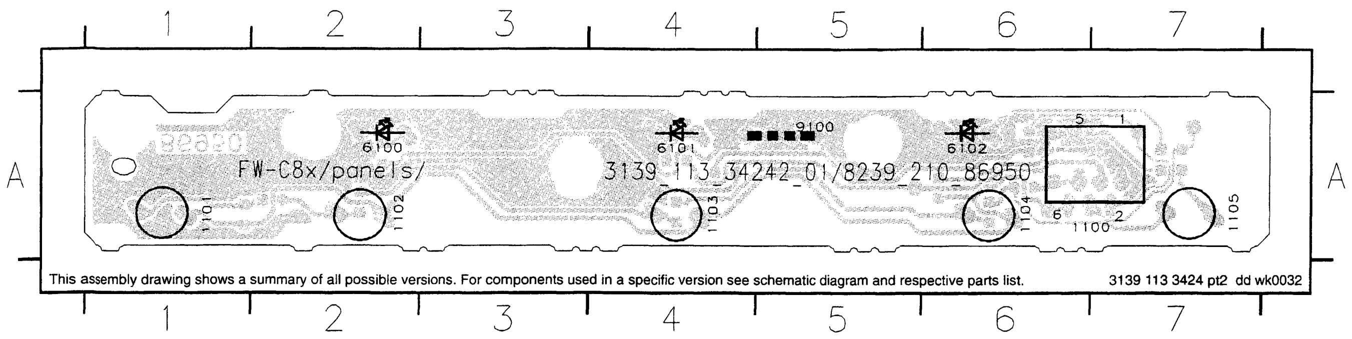
21

3139 118 53120...86940 for...3424 pt2 dd wk032

KEY-CDC BOARD - COMPONENT LAYOUT

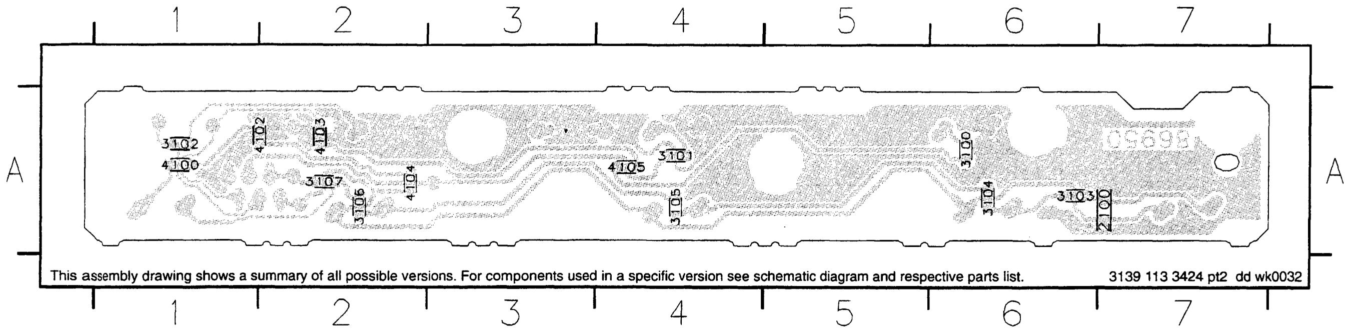
1100	A6	1101	A1	1102	A2	1103	A4	1104	A6	1105	A7	6100	A2	6101	A4	6102	A6	9100	A5



1 2 3 4 5 6 7
A
FW-C8x/panels/
3139_113_34242_01/8239_210_86950
6100
6101
6102
9100
1100
1101
1102
1103
1104
1105
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
3139 113 3424 pt2 dd wk0032

KEY-CDC BOARD - CHIP LAYOUT

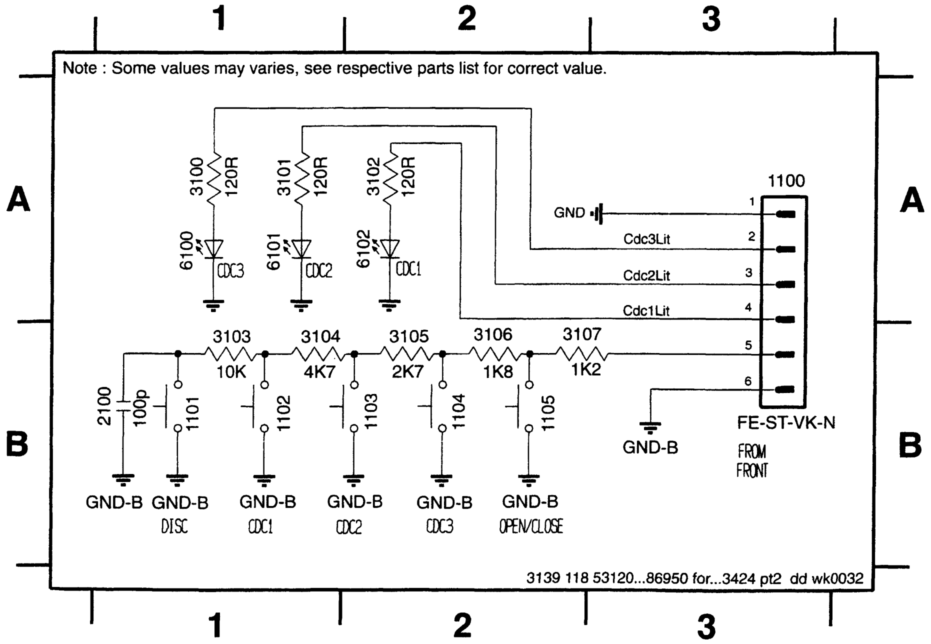
2100	A7	3101	A4	3103	A6	3105	A4	3107	A2	4102	A2	4104	A2
3100	A6	3102	A1	3104	A6	3106	A2	4100	A1	4103	A2	4105	A4



1 2 3 4 5 6 7
A
3102
4100
4102
4103
3107
3106
4104
4105
3101
3105
3100
3104
3103
2100
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
3139 113 3424 pt2 dd wk0032

KEY-CDC PART - CIRCUIT DIAGRAM

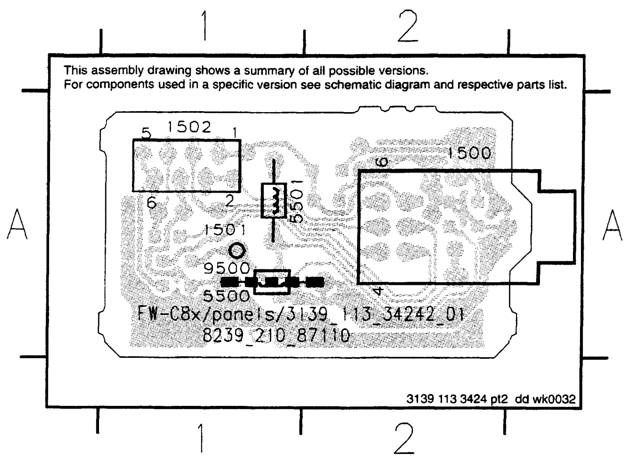
1100	**A3**	**1102**	**B1**	**1104**	**B2**	**2100**	**B1**	**3101**	**A1**	**3103**	**B1**	**3105**	**B2**	**3107**	**B2**	**6101**	**A1**
1101	**B1**	**1103**	**B2**	**1105**	**B2**	**3100**	**A1**	**3102**	**A2**	**3104**	**B1**	**3106**	**B2**	**6100**	**A1**	**6102**	**A2**



1 2 3
A B
Note : Some values may varies, see respective parts list for correct value.
3100 120R
3101 120R
3102 120R
6100 CDC3
6101 CDC2
6102 CDC1
1100
GND
Cdc3Lit
Cdc2Lit
Cdc1Lit
1 2 3 4 5 6
3103 10K
3104 4K7
3105 2K7
3106 1K8
3107 1K2
2100 100p
1101
1102
1103
1104
1105
FE-ST-VK-N
FROM FRONT
GND-B
GND-B DISC
GND-B CDC1
GND-B CDC2
GND-B CDC3
GND-B OPEN/CLOSE
3139 118 53120...86950 for...3424 pt2 dd wk0032

HEADPHONE BOARD - COMPONENT LAYOUT

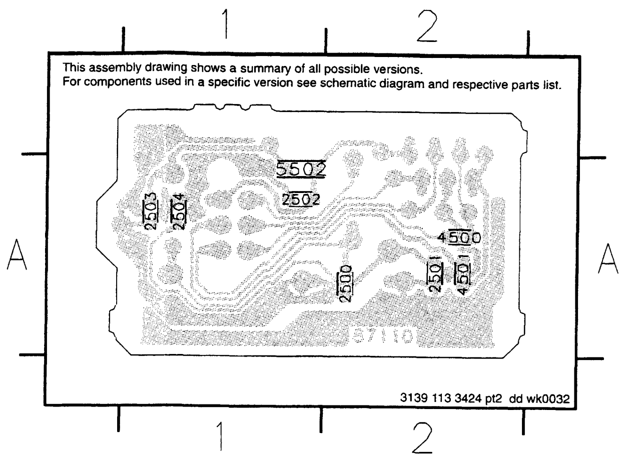
1500	A2	1502	A1	5501	A1
1501	A1	5500	A1	9500	A1



1 2
A
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
1502
1500
5501
1501
9500
5500
FW-C8x/panels/3139_113_34242_01
8239_210_87110
3139 113 3424 pt2 dd wk0032

HEADPHONE BOARD - CHIP LAYOUT

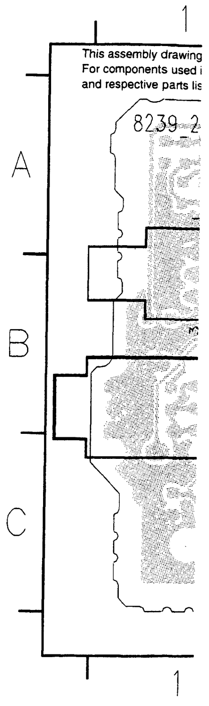
2500	A2	2502	A1	2504	A1	4501	A2
2501	A2	2503	A1	4500	A2	5502	A1



1 2
A
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
5502
2502
2503
2504
4500
2501
4501
2500
87110
3139 113 3424 pt2 dd wk0032

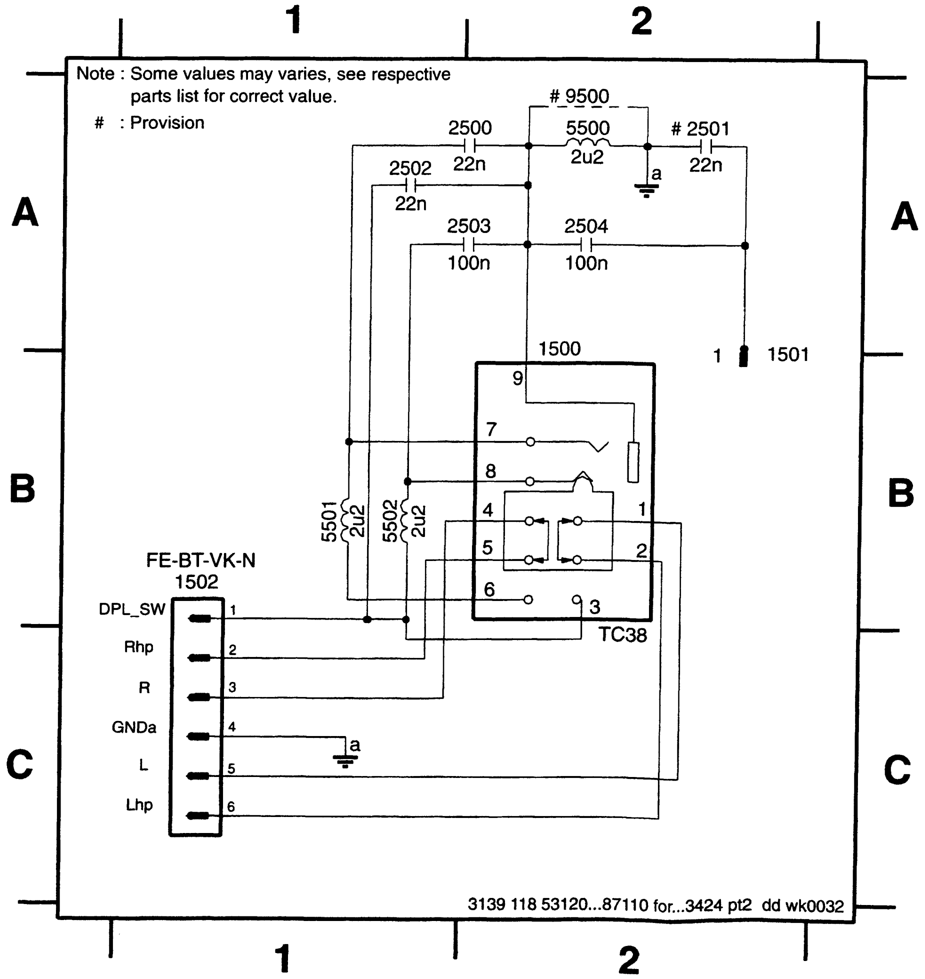
KARAOKE B LAYOUT

26	C2
1600	B1
2602	A2



HEADPHONE PART - CIRCUIT DIAGRAM

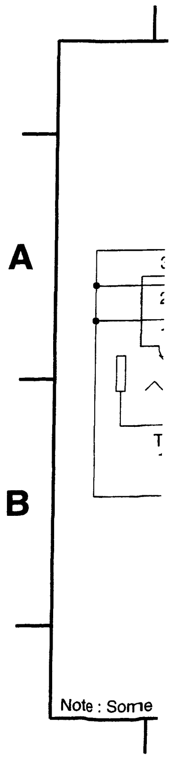
1500	**B2**	**1502**	**B1**	**2501**	**A2**	**2503**	**A2**	**5500**	**A2**	**5502**	**B1**
1501	**A2**	**2500**	**A2**	**2502**	**A1**	**2504**	**A2**	**5501**	**B1**	**9500**	**A2**



1 2
A B C
Note : Some values may varies, see respective parts list for correct value.
# : Provision
# 9500
2500 22n
5500 2u2
# 2501 22n
2502 22n
2503 100n
2504 100n
a
1500
1 1501
9 7 8 4 5 6 1 2 3
TC38
5501 2u2
5502 2u2
FE-BT-VK-N
1502
DPL_SW
Rhp
R
GNDa
L
Lhp
1 2 3 4 5 6
3139 118 53120...87110 for...3424 pt2 dd wk0032

KARAOKE P

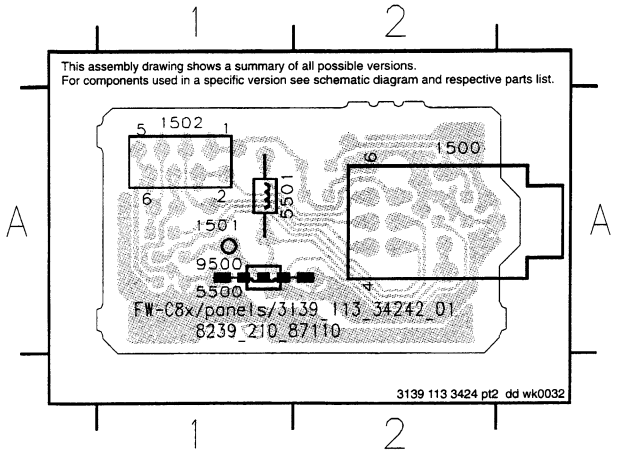
26	**B4**
1600	**B1**



A
B
Note : Some

HEADPHONE BOARD - COMPONENT LAYOUT

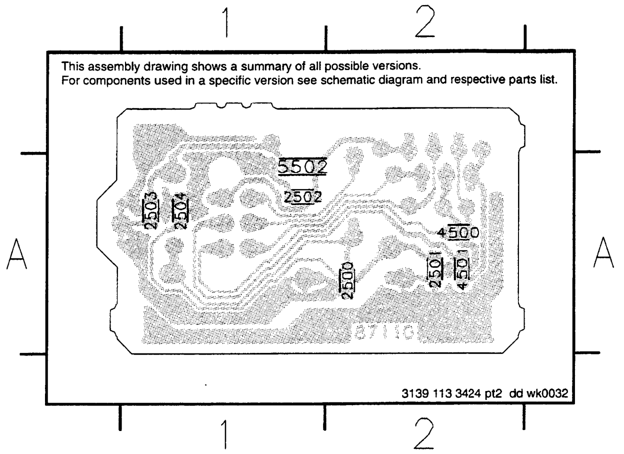
1500 A2	1502 A1	5501 A1
1501 A1	5500 A1	9500 A1



1
2
A
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
1502
5
1
6
2
5501
1500
6
4
1501
9500
5500
FW-C8x/panels/3139_113_34242_01
8239_210_87110
3139 113 3424 pt2 dd wk0032

HEADPHONE BOARD - CHIP LAYOUT

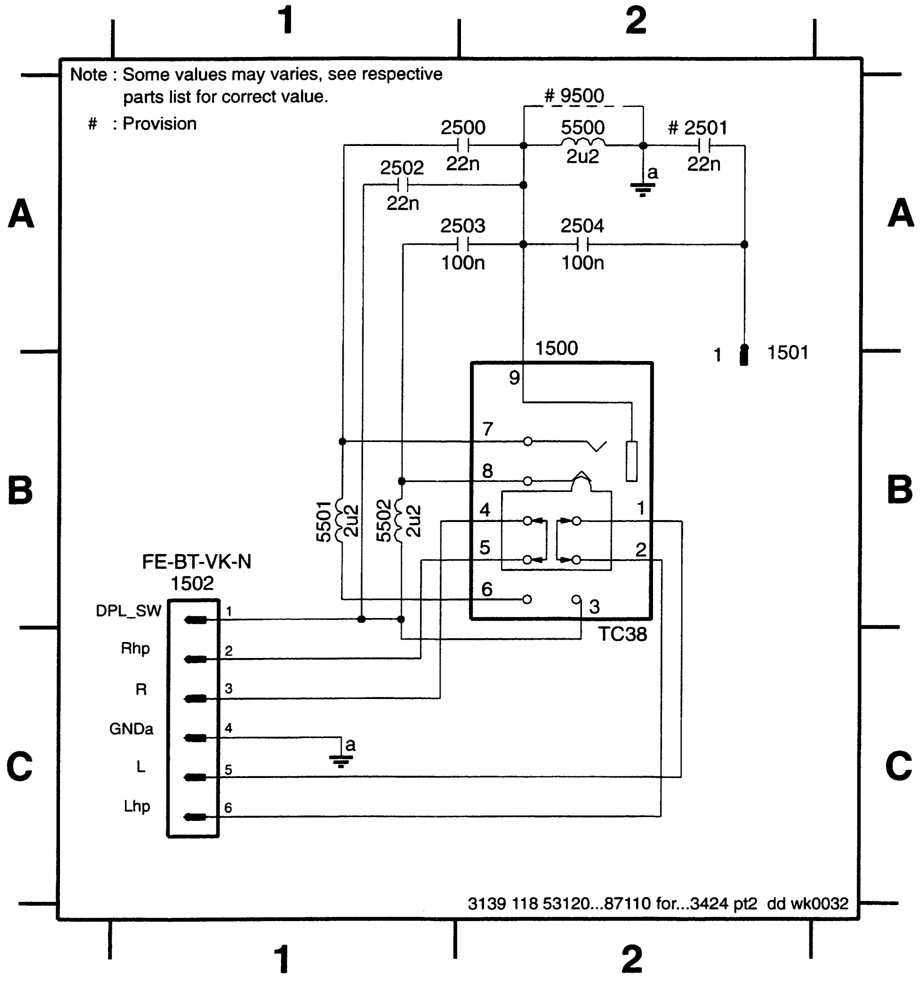
2500 A2	2502 A1	2504 A1	4501 A2
2501 A2	2503 A1	4500 A2	5502 A1



1
2
A
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
5502
2502
2503
2504
2500
4500
2501
4501
87110
3139 113 3424 pt2 dd wk0032

HEADPHONE PART - CIRCUIT DIAGRAM

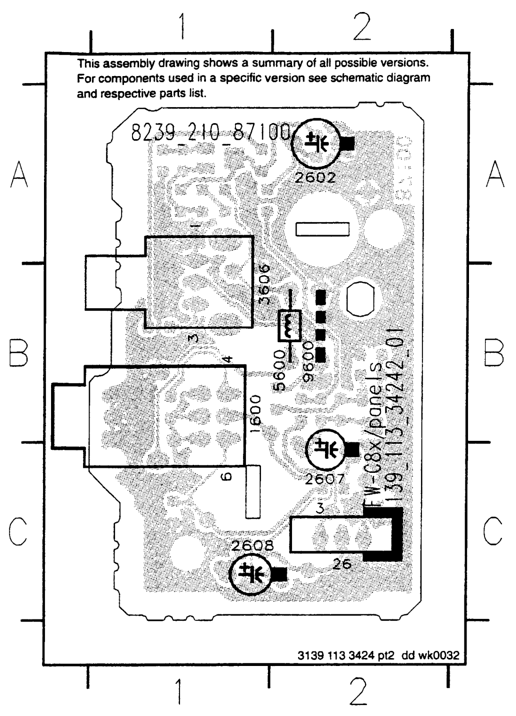
1500 B2	**1502 B1**	**2501 A2**	**2503 A2**	**5500 A2**	**5502 B1**
1501 A2	**2500 A2**	**2502 A1**	**2504 A2**	**5501 B1**	**9500 A2**



1
2
A
B
C
Note : Some values may varies, see respective parts list for correct value.
# : Provision
# 9500
2500
22n
5500
2u2
# 2501
22n
2502
22n
a
2503
100n
2504
100n
1500
1
1501
9
7
8
4
5
6
3
1
2
TC38
5501
2u2
5502
2u2
FE-BT-VK-N
1502
DPL_SW
Rhp
R
GNDa
L
Lhp
1
2
3
4
5
6
a
3139 118 53120...87110 for...3424 pt2 dd wk0032

KARAOKE BOARD - COMPONENT LAYOUT

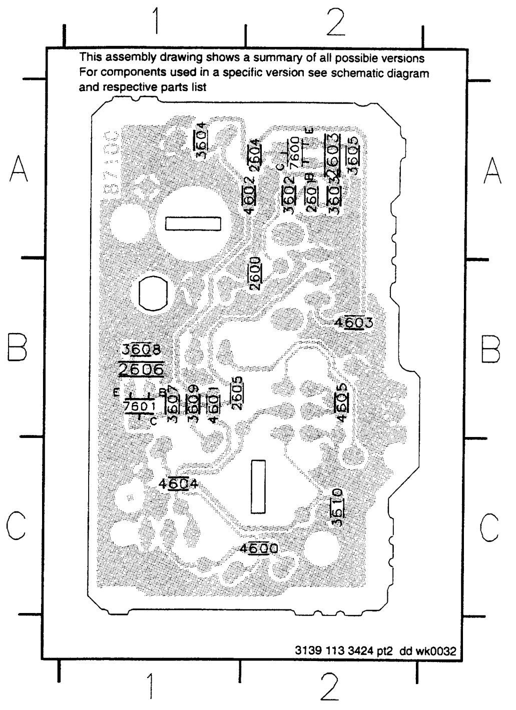
26 C2	2607 C2	5600 B2
1600 B1	2608 C1	9600 B2
2602 A2	3606 B1	



1
2
A
B
C
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
8239 210 87100
2602
3606
5600
9600
1600
FW-C8x/panels
139_113_34242_01
2607
2608
26
3
4
6
3139 113 3424 pt2 dd wk0032

KARAOKE BOARD - CHIP LAYOUT

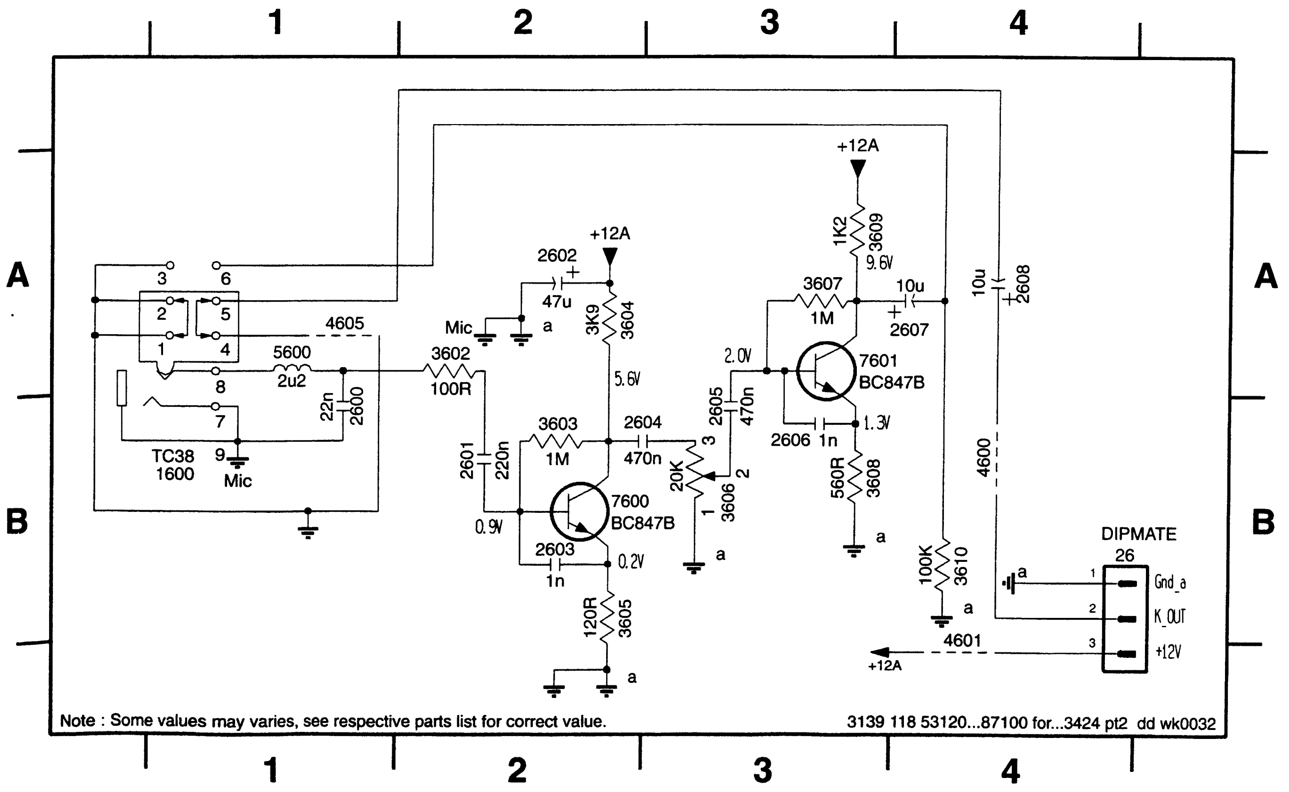
2600 B2	3604 A1	4602 A2
2601 A2	3605 A2	4603 B2
2603 A2	3607 B1	4604 C1
2604 A2	3608 B1	4605 B2
2605 B1	3609 B1	7600 A2
2606 B1	3610 C2	7601 B1
3602 A2	4600 C2	
3603 A2	4601 B1	



1
2
A
B
C
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list
3604
2604
4602
3602
2603
7600
3603
2601
3605
2600
4603
3608
2606
7601
3607
3609
4601
2605
4605
4604
3610
4600
3139 113 3424 pt2 dd wk0032

KARAOKE PART - CIRCUIT DIAGRAM

26 B4	**2600 B1**	**2602 A2**	**2604 B2**	**2606 B3**	**2608 A4**	**3603 B2**	**3605 B2**	**3607 A3**	**3609 A3**	**4600 B4**	**4605 A1**	**7600 B**
1600 B1	**2601 B2**	**2603 B2**	**2605 B3**	**2607 A4**	**3602 A2**	**3604 A2**	**3606 B3**	**3608 B3**	**3610 B4**	**4601 B4**	**5600 A1**	**7601 A**



1
2
3
4
A
B
+12A
3609
1K2
9.6V
3607
1M
10u
2607
10u
2608
+12A
2602
47u
3604
3K9
a
Mic
5.6V
3
6
2
5
1
4
4605
5600
2u2
8
7
2600
22n
3602
100R
TC38
1600
9
Mic
3603
1M
2604
470n
2601
220n
7600
BC847B
0.9V
2603
1n
0.2V
3605
120R
a
2.0V
2605
470n
20K
3606
3
2
1
a
7601
BC847B
1.3V
2606 1n
3608
560R
a
3610
100K
a
4600
DIPMATE
26
a
1
2
3
Gnd_a
K_OUT
+12V
4601
+12A

Note : Some values may varies, see respective parts list for correct value.

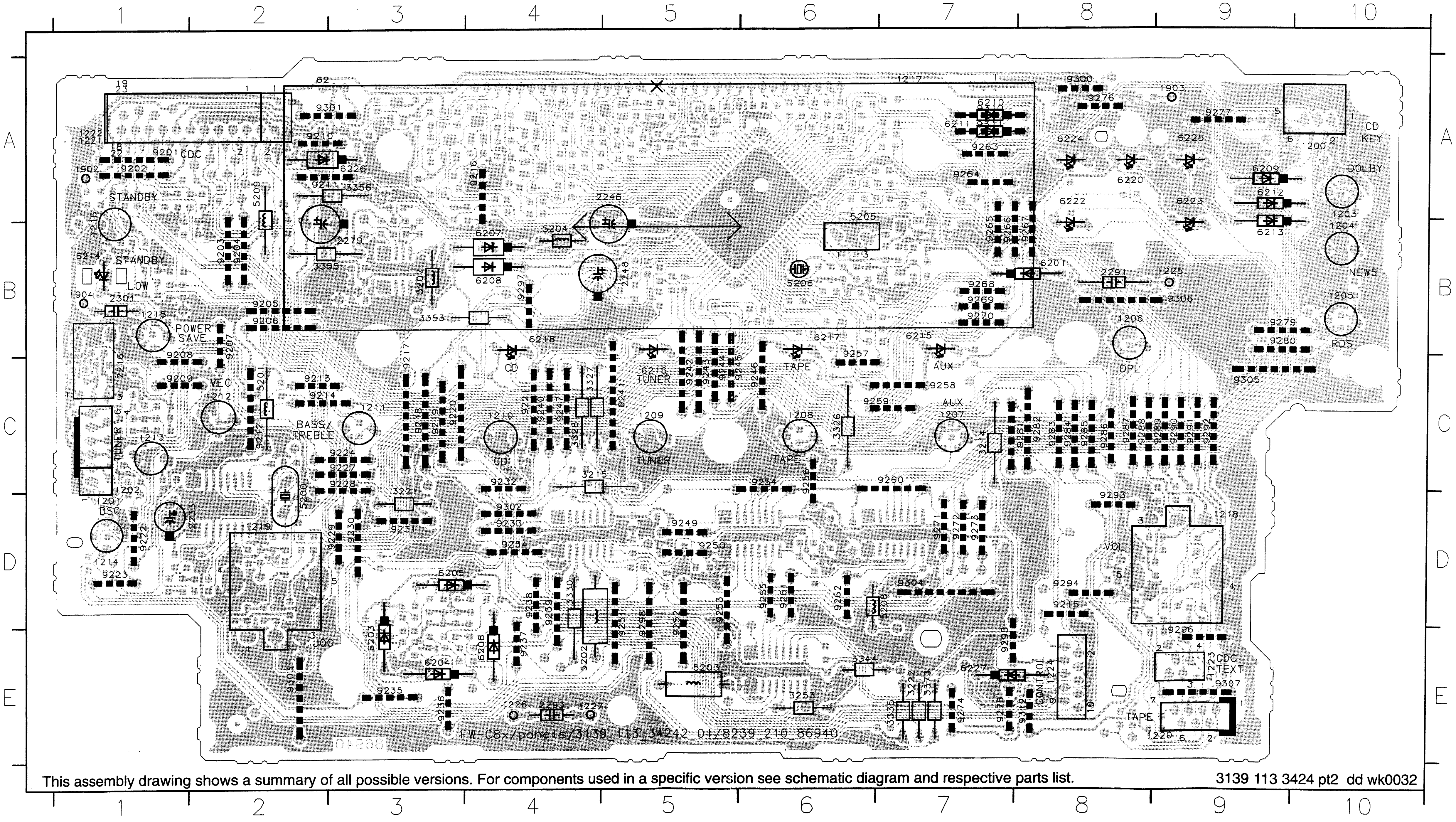
3139 118 53120...87100 for...3424 pt2 dd wk0032

PHIL-05425/DRUCK112

FRONT BOARD (pt.2)

FRONT BOARD - COMPONENT LAYOUT

1200	A10
1201	D1
1202	C1
1203	A10
1204	B10
1205	B10
1206	B8
1207	C7
1208	C6
1209	C5
1210	C4
1211	C3
1212	C2
1213	C1
1214	D1
1215	B1
1216	B1
1217	A7
1218	D9
1219	D2
1220	E9
1221	A1
1222	A1
1223	E9
1224	E8
1225	B9
1226	E4
1227	E4
1902	A1
1903	A9
1904	B1
2233	D2
2246	A5
2248	B5
2279	B3
2291	B8
2293	E4
2301	B1
3214	C7
3215	C4
3221	C3
3222	E7
3253	E6
3326	C6
3327	C4
3328	C4
3330	D4
3335	E7
3344	E6
3353	B3
3355	B2
3356	A3
3373	E7
5200	D2
5201	C2
5202	E4
5203	E5
5204	B4
5205	A6
5206	B6
5207	B3
5208	D7
5209	A2
6201	B8
6203	E3
6204	E3
6205	D3
6206	E4
6207	B4
6208	B4
6209	A9
6210	A7
6211	A7
6212	A9
6213	B9
6214	B1
6215	B7
6216	C5
6217	B6
6218	B4
6220	A8
6222	A8
6223	A9
6224	A8
6225	A9
6226	A3
6227	E7
7216	C1
9201	A1
9202	A1
9203	B2
9204	B2
9205	B2
9206	B2
9207	B2
9208	B1
9209	C1
9210	A2
9211	A2
9212	C2
9213	C2
9214	C2
9215	D8
9216	A4
9217	B3
9218	C3
9219	C3
9220	C3
9221	C4
9222	D1
9223	D1
9224	C3
9227	C3
9228	C3
9229	D3
9230	D3
9231	D3
9232	C4
9233	D4
9234	D4
9235	E3
9236	E3
9237	E4
9238	D4
9239	D4
9240	C4
9241	C5
9242	C5
9243	C5
9244	C5
9245	C5
9246	C6
9247	C4
9249	D5
9250	D5
9251	D5
9252	D5
9253	D5
9254	C6
9255	D6
9256	C6
9257	B6
9258	C7
9259	C6
9260	C7
9261	D6
9262	D6
9263	A7
9264	A7
9265	B7
9266	B7
9267	B8
9268	B7
9269	B7
9270	B7
9271	D7
9272	D7
9273	D7
9274	E7
9275	E7
9276	A8
9277	A9
9279	B9
9280	B9
9281	C8
9282	C8
9283	C8
9284	C8
9285	C8
9286	C8
9287	C8
9288	C8
9289	C9
9290	C9
9291	C9
9292	C9
9293	D8
9294	D8
9295	E7
9296	E9
9297	B4
9298	D5
9300	A8
9301	A3
9302	D4
9303	E2
9304	D7
9305	C9
9306	B9
9307	E9
9310	A7
9311	A7
9312	E8



1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
CDC
STANDBY
STANDBY
LOW
POWER SAVE
VEC
TUNER
BASS/ TREBLE
DSC
JOG
CD
TUNER
TAPE
AUX
DPL
RDS
NEWS
DOLBY
CD KEY
VOL
CONTROL
CDC TEXT
TAPE
FW-C8x/panels/3139_113_34242_01/8239_210_86940

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3424 pt2 dd wk0032

FRONT BOARD - CHIP LAYOUT

2200	A7
2201	A7
2202	A7
2204	A7
2205	A7
2206	A7
2208	A7
2209	A7
2210	A8
2212	A8
2213	A8
2216	A7
2217	A8
2220	A8
2221	A8
2225	D10
2226	C10
2227	C10
2228	C10
2229	C10
2230	D10
2231	D10
2232	D10
2234	D9
2235	D9
2236	D9
2237	E5
2238	D8
2239	E8
2240	D8
2241	D8
2242	D8
2243	E8
2244	E7
2245	E8
2247	B6
2249	B4
2250	B5
2251	B5
2252	B4
2253	B4
2254	A5
2255	B8
2256	D5
2257	D6
2258	D6
2259	D4
2260	B5
2261	B4
2262	C10
2263	B10
2264	B5
2265	D2
2266	D2
2267	D9
2268	D9
2269	E2
2270	D2
2271	D2
2272	D2
2273	B8
2274	A8
2275	A9
2276	B10
2277	B10
2278	B10
2280	A3
2281	B8
2282	B8
2283	A8
2284	A10
2285	A3
2286	D5
2287	D5
2288	D5
2289	D4
2290	D6
2292	A6
2294	A6
2296	A6
2297	B5
2298	A9
2299	A10
2300	A10
2302	D6
3200	A7
3201	A7
3202	A8
3204	A8
3205	A8
3208	A1
3209	B1
3210	B1
3211	B3
3212	C4
3213	C5
3216	C10
3217	C9
3218	B10
3219	B10
3220	C8
3223	E4
3224	C10
3225	C10
3226	C10
3227	C10
3228	C10
3229	C10
3230	C10
3231	C10
3232	D9
3233	D9
3234	D9
3235	C9
3236	C9
3237	D9
3238	E8
3239	E8
3240	E8
3241	E8
3242	D8
3243	D8
3244	D7
3245	D8
3246	D7
3247	E8
3248	E8
3249	E8
3250	B6
3251	B7
3252	B6
3254	B6
3255	B6
3256	B6
3257	B6
3258	B6
3259	B6
3260	B6
3261	B6
3262	B4
3263	A7
3264	A7
3265	A7
3266	A7
3267	A7
3268	A7
3269	A7
3270	A7
3271	A7
3272	A7
3273	A7
3274	A7
3275	A6
3276	A6
3277	A6
3278	A6
3279	A6
3280	A6
3281	A6
3282	A6
3283	A6
3284	A6
3285	A6
3286	A5
3287	B5
3288	B5
3289	B5
3290	B5
3291	B5
3292	B5
3293	B5
3294	B5
3295	B5
3296	B5
3297	B5
3298	A5
3299	A4
3300	A4
3301	A5
3302	A4
3303	A5
3304	A5
3305	A5
3306	A5
3307	A5
3308	A5
3309	A5
3310	A5
3311	A5
3312	A5
3313	A4
3314	A5
3315	A5
3316	A4
3317	A4
3318	A4
3320	B8
3321	B7
3322	B8
3323	B8
3324	B10
3325	C4
3329	D5
3331	A3
3332	B3
3333	A3
3334	A2
3336	B5
3337	C10
3338	D2
3339	D2
3340	D9
3341	D9
3342	B4
3343	C10
3345	C10
3346	B4
3347	E3
3348	E3
3351	E2
3352	B9
3354	B9
3357	A9
3358	A10
3359	A10
3360	A10
3361	A10
3362	A10
3363	D2
3364	D3
3367	B9
3368	B10
3369	B10
3370	B10
3371	C7
3372	C7
3374	E5
3376	A6
3377	D6
3378	E2
4202	D9
4203	B9
4204	B9
4205	A9
4206	B10
4207	B10
4208	C9
4209	C9
4210	D10
4211	D10
4212	D10
4213	D9
4214	D9
4215	D9
4216	D10
4217	D9
4218	D9
4219	D8
4220	A9
4221	A2
4222	A8
4223	A8
4224	B8
4225	C7
4226	A8
4227	A7
4228	A8
4229	C7
4230	D7
4231	D7
4232	D9
4233	D8
4234	E7
4235	A8
4236	C5
4237	C5
4238	D6
4239	D5
4240	C4
4241	A4
4242	D4
4243	A3
4244	D2
4245	D2
4246	D2
4247	D2
4248	D2
4249	E2
4250	E2
4251	E2
4252	D5
4253	C9
4254	D9
4255	B4
4256	D6
4257	D8
4258	A6
4259	A7
4260	A7
4261	A7
4262	A8
4263	A8
4264	A8
4265	B8
4266	A9
4267	B5
4268	A9
4269	B10
4270	E9
4271	A9
4272	D10
4273	A1
4274	D3
7200	A7
7201	A7
7202	A7
7204	D5
7205	A8
7206	A8
7209	A6
7210	D7
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7212	B4
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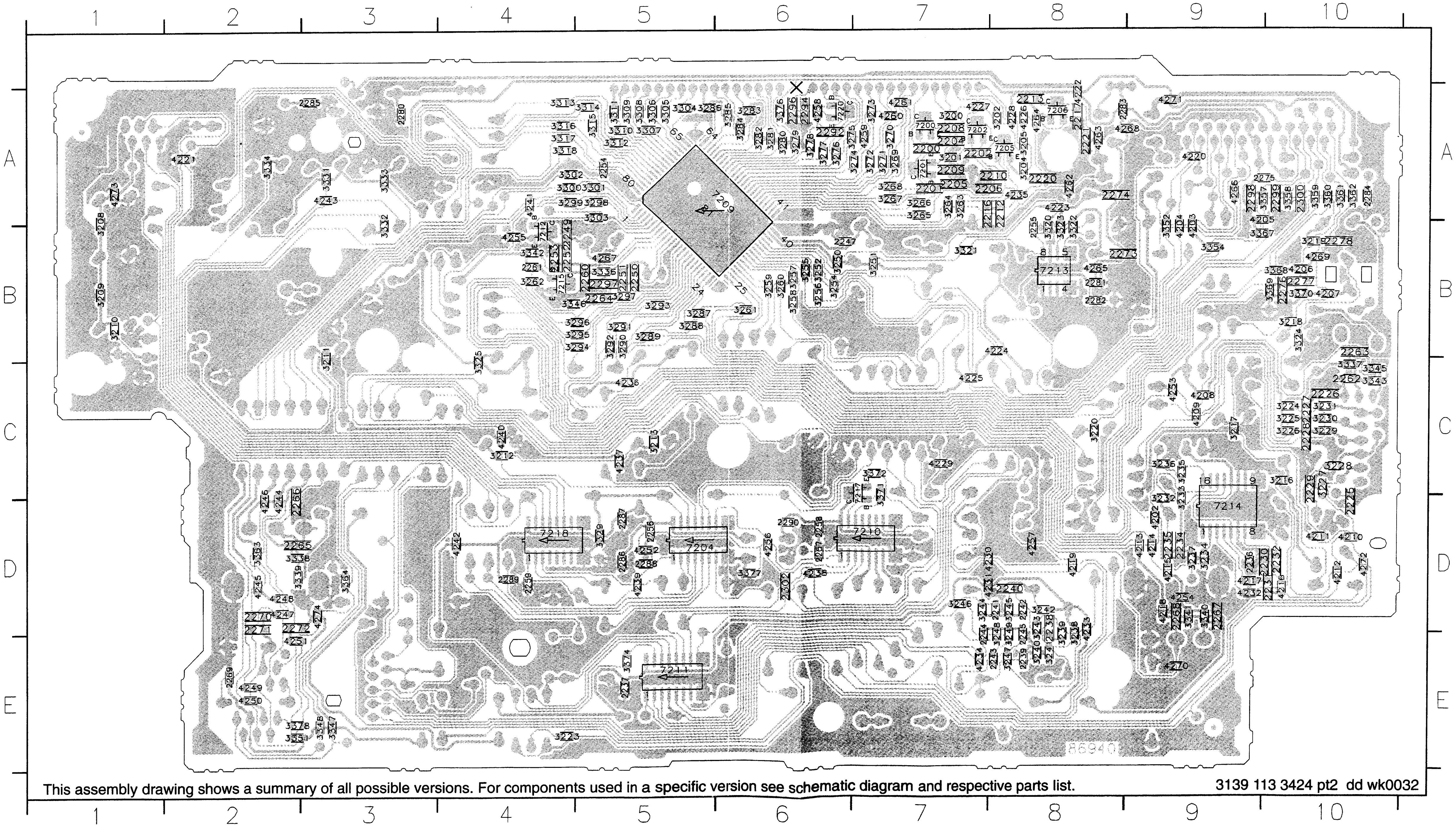
7214	D9
7215	B4
7217	C7
7218	D4
7220	A6

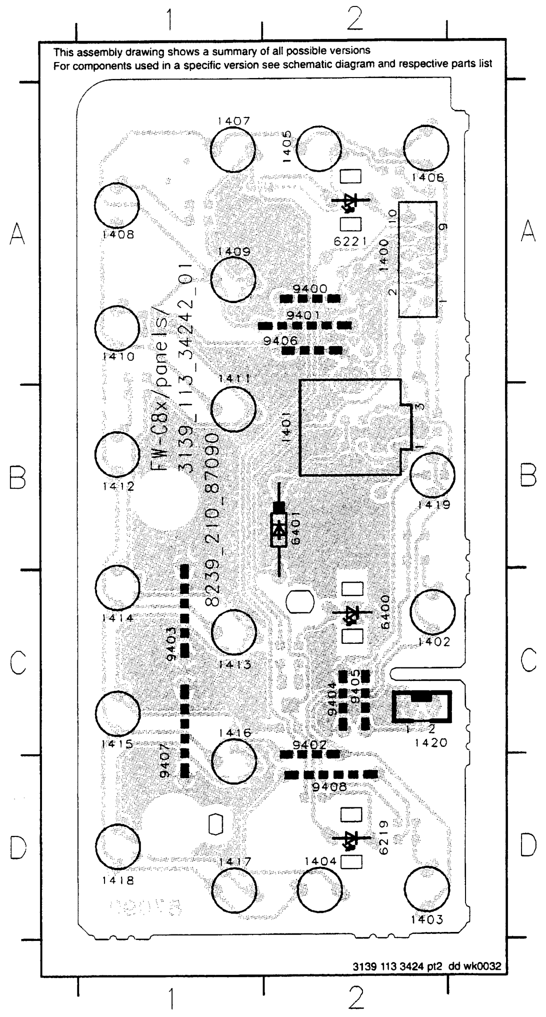

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
7209
7213
7214
7218
7204
7210
7211
7200
7201
7202
7205
7206
7212
7215
7217
7220
2285
2280
4221
3334
4273
3331
3333
4243
3332
3208
3209
3210
3211
3325
4240
3212
3213
4237
3220
4229
4224
4225
4208
4209
3217
3236
3232
3216
4211
4210
4272
4270
3223
3378
3351
4249
4250
2269
2270
2271
2272
4251
4247
4245
2265
2266
86940

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3424 pt2 dd wk0032

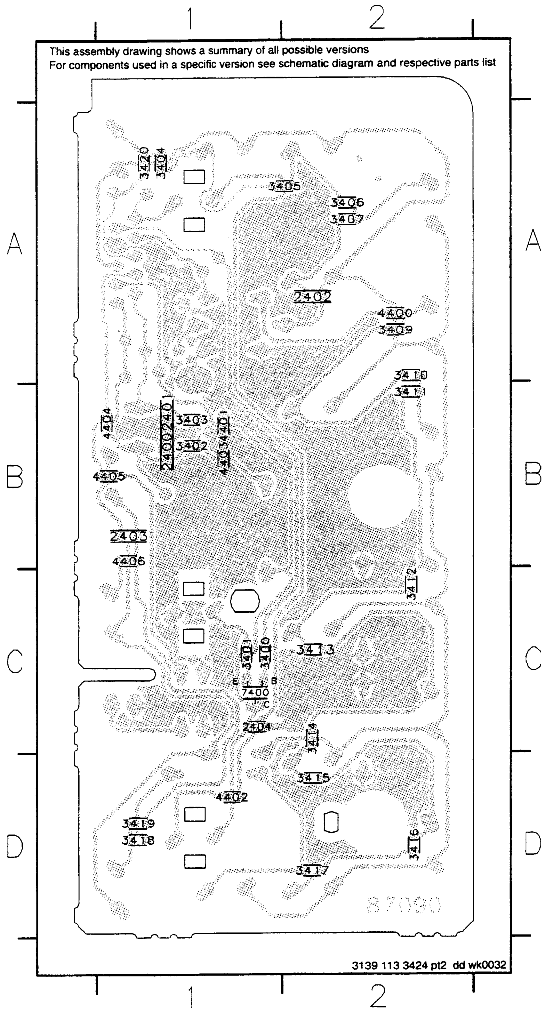
CONTROL BOARD - COMPONENT LAYOUT

1400	A2	1407	A1	1414	C1	6219	D2	9403	C1
1401	B2	1408	A1	1415	C1	6221	A2	9404	C2
1402	C2	1409	A1	1416	C1	6400	C2	9405	C2
1403	D2	1410	A1	1417	D1	6401	B2	9406	A2
1404	D2	1411	A1	1418	D1	9400	A2	9407	D1
1405	A2	1412	B1	1419	B2	9401	A2	9408	D2
1406	A2	1413	C1	1420	C2	9402	C2		


This assembly drawing shows a summary of all possible versions
For components used in a specific version see schematic diagram and respective parts list
1
2
A
B
C
D
1400
1401
1402
1403
1404
1405
1406
1407
1408
1409
1410
1411
1412
1413
1414
1415
1416
1417
1418
1419
1420
6219
6221
6400
6401
9400
9401
9402
9403
9404
9405
9406
9407
9408
FW-C8x/panels/
3139_113_34242_01
8239_210_87090
3139 113 3424 pt2 dd wk0032

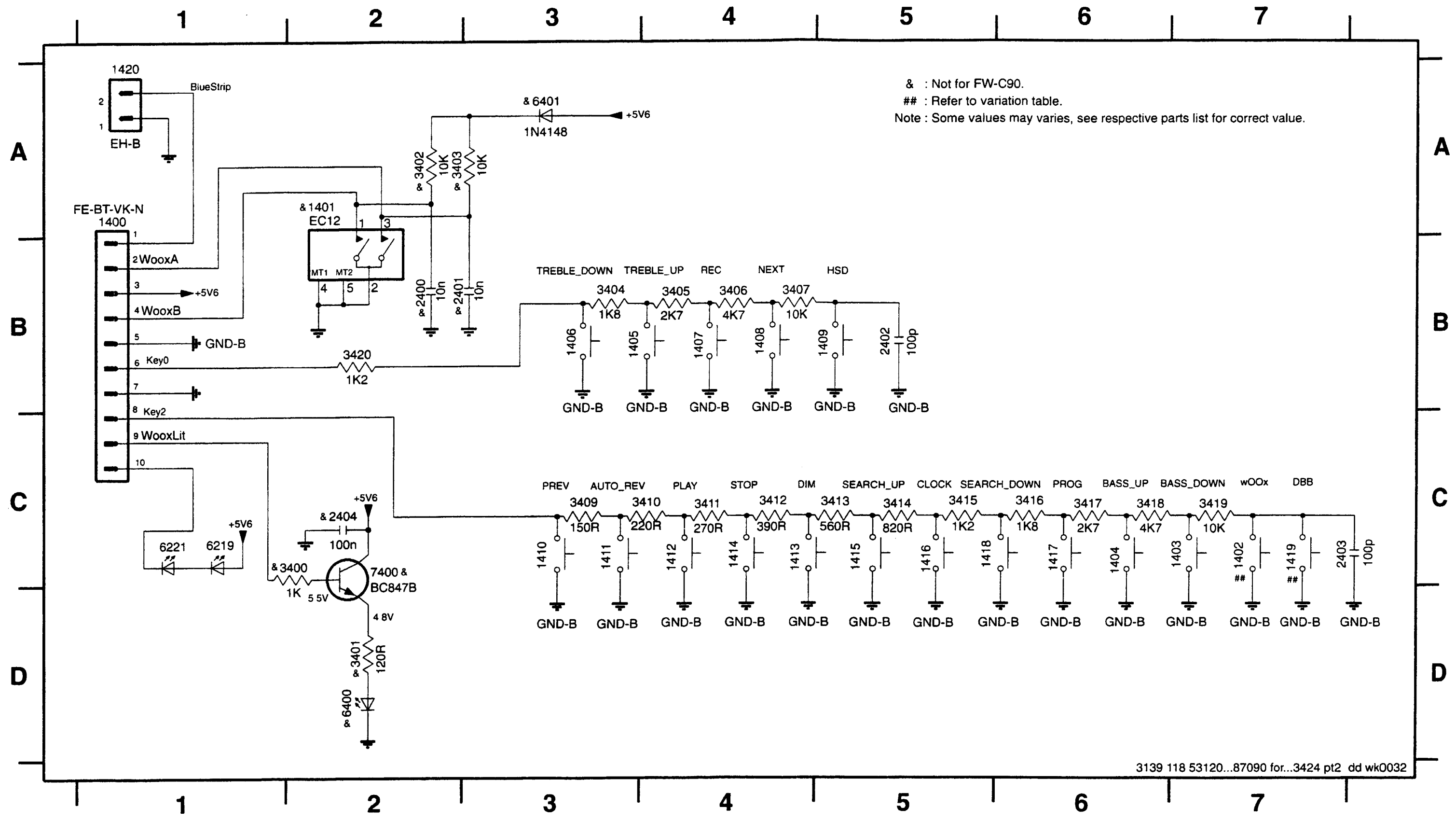
CONTROL BOARD - CHIP LAYOUT

2400	B1	3402	B1	3410	A2	3417	D2	4403	B1
2401	B1	3403	B1	3411	B2	3418	D1	4404	B1
2402	A2	3404	A1	3412	C2	3419	D1	4405	B1
2403	B1	3405	A2	3413	C2	3420	A1	4406	B1
2404	C1	3406	A2	3414	C2	4400	A2	7400	C1
3400	C1	3407	A2	3415	D2	4401	B1		
3401	C1	3409	A2	3416	D2	4402	D1		


This assembly drawing shows a summary of all possible versions
For components used in a specific version see schematic diagram and respective parts list
1
2
A
B
C
D
3420
3404
3405
3406
3407
2402
4400
3409
3410
3411
4404
2400
2401
3403
3402
4403
4401
4405
2403
4406
3412
3401
3400
7400
2404
3413
3414
3415
4402
3419
3418
3416
3417
87090
3139 113 3424 pt2 dd wk0032

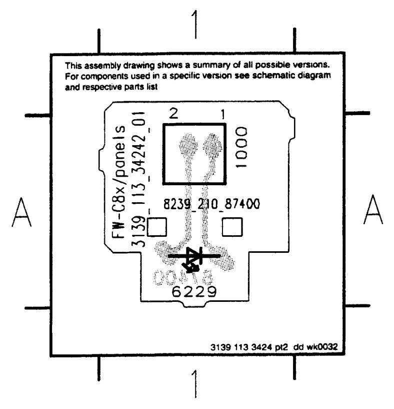
CONTROL PART - CIRCUIT DIAGRAM

1400	A1	1403	C7	1406	B3	1409	B5	1412	C4	1415	C5	1418	C5	2400	B2	2403	C7	3401	D2	3404	B3	3407	B4	3411	C4	3414	C5	3417	C6	3420	B2	6400	D2
1401	A2	1404	C6	1407	B4	1410	C3	1413	C4	1416	C5	1419	C7	2401	B2	2404	C2	3402	A2	3405	B4	3409	C3	3412	C4	3415	C5	3418	C6	6219	C1	6401	A3
1402	C7	1405	B3	1408	B4	1411	C3	1414	C4	1417	C6	1420	A1	2402	B5	3400	C2	3403	A2	3406	B4	3410	C4	3413	C5	3416	C6	3419	C7	6221	C1	7400	C2


& : Not for FW-C90.
: Refer to variation table.
Note : Some values may varies, see respective parts list for correct value.
1
2
3
4
5
6
7
A
B
C
D
1420
BlueStrip
EH-B
FE-BT-VK-N
1400
2 WooxA
3
+5V6
4 WooxB
5
GND-B
6 Key0
7
8 Key2
9 WooxLit
10
& 1401
EC12
MT1
MT2
& 6401
1N4148
3402
10K
3403
10K
2400
10n
2401
10n
3420
1K2
TREBLE_DOWN
TREBLE_UP
REC
NEXT
HSD
3404
1K8
3405
2K7
3406
4K7
3407
10K
1406
1405
1407
1408
1409
2402
100p
PREV
AUTO_REV
PLAY
STOP
DIM
SEARCH_UP
CLOCK
SEARCH_DOWN
PROG
BASS_UP
BASS_DOWN
wOOx
DBB
3409
150R
3410
220R
3411
270R
3412
390R
3413
560R
3414
820R
3415
1K2
3416
1K8
3417
2K7
3418
4K7
3419
10K
1410
1411
1412
1414
1413
1415
1416
1418
1417
1404
1403
1402
1419
2403
100p
6221
6219
& 2404
100n
& 3400
1K
5 5V
7400 &
BC847B
4 8V
& 3401
120R
& 6400
3139 118 53120...87090 for...3424 pt2 dd wk0032

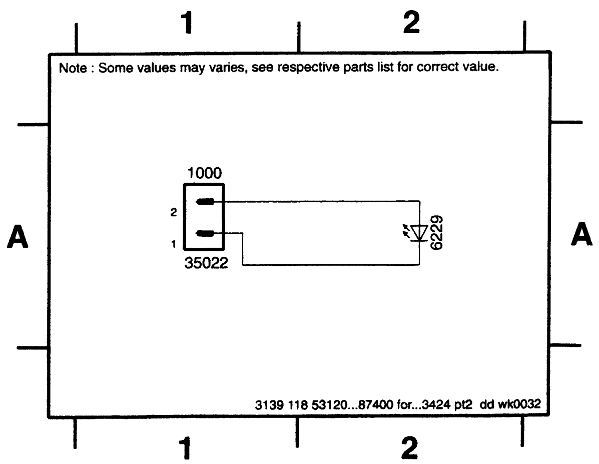
BLUE STRIP LED BOARD - COMPONENT LAYOUT

1000	A1	6229	A1


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list
1
A
1000
FW-C8x/panels
3139_113_34242_01
8239_210_87400
6229
3139 113 3424 pt2 dd wk0032

BLUE STRIP LED PART - CIRCUIT DIAGRAM

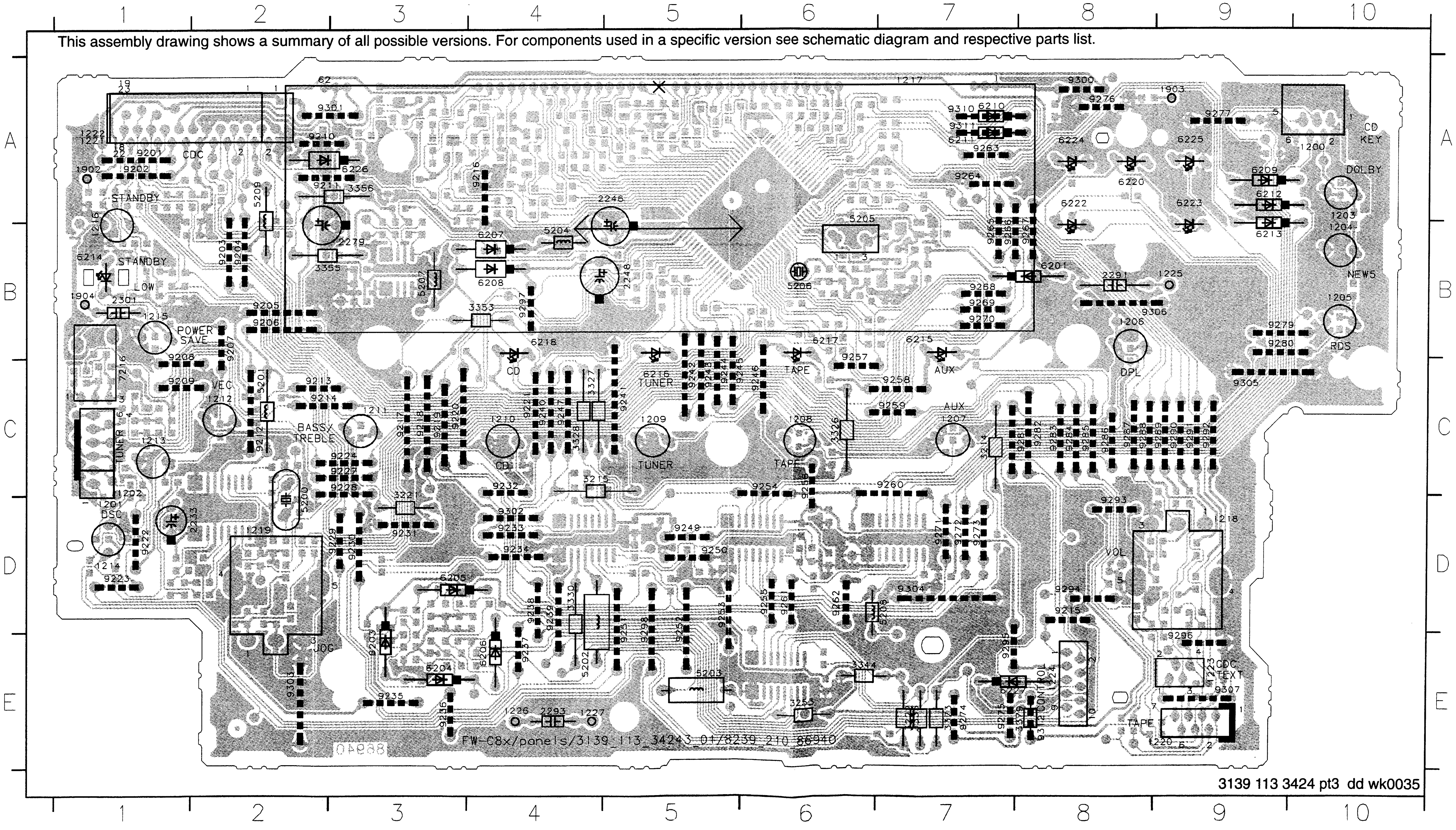
1000	A1	6229	A2


Note : Some values may varies, see respective parts list for correct value.
1
2
A
1000
35022
6229
3139 118 53120...87400 for...3424 pt2 dd wk0032

FRONT BOARD (pt.3)

FRONT BOARD - COMPONENT LAYOUT

1200	A10	1212	C2	1224	E8	2293	E4	3344	E6	5206	B6	6210	A7	6224	A8	9208	B1	9220	C3	9234	D4	9246	C6	9259	C7	9271	D7	9284	C8	9296	E9	9311	A7
1201	D1	1213	C1	1225	B9	2301	B1	3353	B4	5207	B3	6211	A7	6225	A9	9209	C1	9221	C4	9235	E3	9247	C4	9260	C7	9272	D7	9285	C8	9297	B4	9312	E8
1202	C1	1214	D1	1226	E4	3214	C7	3355	B2	5208	D7	6212	A9	6226	A3	9210	A2	9222	D1	9236	E3	9249	D5	9261	D6	9273	D7	9286	C8	9298	D5		
1203	A10	1215	B1	1227	E4	3215	C4	3356	A3	5209	A2	6213	B9	6227	E7	9211	A2	9223	D1	9237	E4	9250	D5	9262	D6	9274	E7	9287	C8	9300	A8		
1204	B10	1216	B1	1902	A1	3221	C3	3373	E7	6201	B8	6214	B1	7216	C1	9212	C2	9224	C3	9238	D4	9251	D5	9263	A7	9275	E7	9288	C8	9301	A3		
1205	B10	1217	A7	1903	A9	3222	E7	3379	E8	6203	E3	6215	B7	9201	A1	9213	C2	9227	C3	9239	D4	9252	D5	9264	A7	9276	A8	9289	C9	9302	D4		
1206	B8	1218	D9	1904	B1	3253	E6	5200	D2	6204	E3	6216	C5	9202	A1	9214	C2	9228	C3	9240	C4	9253	D5	9265	B7	9277	A9	9290	C9	9303	E2		
1207	C7	1219	D2	2233	D2	3326	C6	5201	C2	6205	D3	6217	B6	9203	B2	9215	D8	9229	D3	9241	C5	9254	C6	9266	B7	9279	B9	9291	C9	9304	D7		
1208	C6	1220	E9	2246	A5	3327	C4	5202	E4	6206	E4	6218	B4	9204	B2	9216	A4	9230	D3	9242	C5	9255	D6	9267	B8	9280	B9	9292	C9	9305	C9		
1209	C5	1221	A1	2248	B5	3328	C4	5203	E5	6207	B4	6220	A8	9205	B2	9217	C3	9231	D3	9243	C5	9256	C6	9268	B7	9281	C8	9293	D8	9306	B8		
1210	C4	1222	A1	2279	B3	3330	D4	5204	B4	6208	B4	6222	A8	9206	B2	9218	C3	9232	C4	9244	C5	9257	B6	9269	B7	9282	C8	9294	D8	9307	E9		
1211	C3	1223	E9	2291	B8	3335	E7	5205	A6	6209	A9	6223	A9	9207	B2	9219	C3	9233	D4	9245	C5	9258	C7	9270	B7	9283	C8	9295	E7	9310	A7		

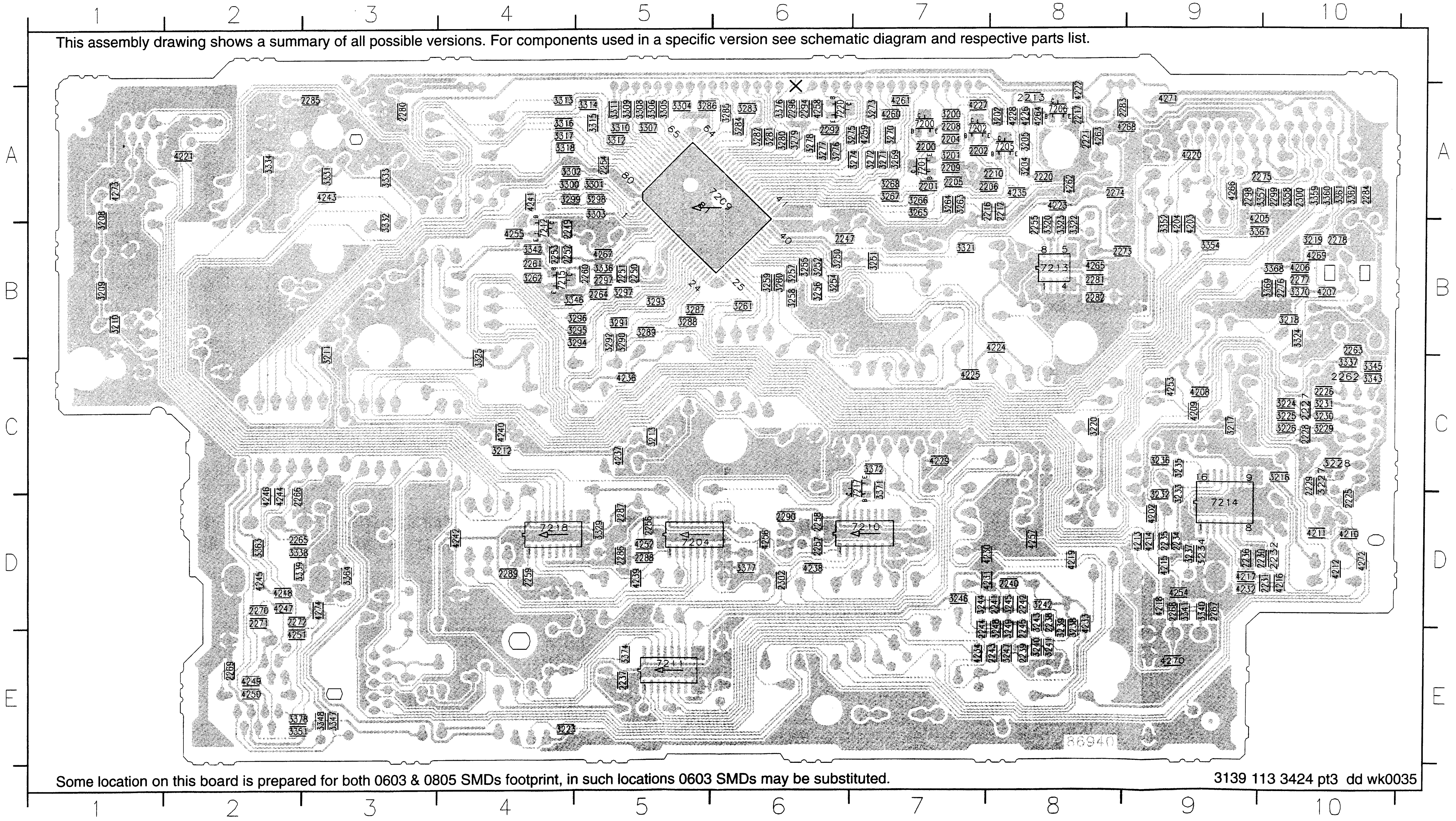

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3424 pt3 dd wk0035

FRONT BOARD - CHIP LAYOUT

2200	A7	2230	D10	2253	B4	2273	B8	2297	B5	3220	C8	3242	D8	3263	A7	3283	A6	3303	A5	3324	B10	3352	B9	4202	D9	4222	A8	4242	D4	4262	A8	7210	D7
2201	A7	2231	D10	2254	A5	2274	A8	2298	A9	3223	E4	3243	D8	3264	A7	3284	A6	3304	A5	3325	C4	3354	B9	4203	B9	4223	A8	4243	A3	4263	A8	7211	E5
2202	A7	2232	D10	2255	B8	2275	A9	2299	A10	3224	C10	3244	D7	3265	A7	3285	A6	3305	A5	3329	D5	3357	A9	4204	B9	4224	B8	4244	D2	4264	A8	7212	B4
2204	A7	2234	D9	2256	D5	2276	B10	2300	A10	3225	C10	3245	D8	3266	A7	3286	A5	3306	A5	3331	A3	3358	A10	4205	A9	4225	C7	4245	D2	4265	B8	7213	B8
2205	A7	2235	D9	2257	D6	2277	B10	2302	D6	3226	C10	3246	D7	3267	A7	3287	B5	3307	A5	3332	B3	3359	A10	4206	B10	4226	A8	4246	D2	4266	A9	7214	D9
2206	A7	2236	D9	2258	D6	2278	B10	3200	A7	3227	C10	3247	E8	3268	A7	3288	B5	3308	A5	3333	A3	3360	A10	4207	B10	4227	A7	4247	D2	4267	B5	7215	B4
2208	A7	2237	E5	2259	D4	2280	A3	3201	A7	3228	C10	3248	E8	3269	A7	3289	B5	3309	A5	3334	A2	3361	A10	4208	C9	4228	A8	4248	D2	4268	A9	7217	C7
2209	A7	2238	D8	2260	B5	2281	B8	3202	A8	3229	C10	3249	E8	3270	A7	3290	B5	3310	A5	3336	B5	3362	A10	4209	C9	4229	C7	4249	E2	4269	B10	7218	D4
2210	A8	2239	E8	2261	B4	2282	B8	3204	A8	3230	C10	3250	B6	3271	A7	3291	B5	3311	A5	3337	C10	3363	D2	4210	D10	4230	D7	4250	E2	4270	E9	7220	A6
2212	A8	2240	D8	2262	C10	2283	A8	3205	A8	3231	C10	3251	B7	3272	A7	3292	B5	3312	A5	3338	D2	3364	D3	4211	D10	4231	D7	4251	E2	4271	A9		
2213	A8	2241	D8	2263	B10	2284	A10	3208	A1	3232	D9	3252	B6	3273	A7	3293	B5	3313	A4	3339	D2	3367	B9	4212	D10	4232	D9	4252	D5	4272	D10		
2216	A7	2242	D8	2264	B5	2285	A3	3209	B1	3233	D9	3254	B6	3274	A7	3294	B5	3314	A5	3340	D9	3368	B10	4213	D9	4233	D8	4253	C9	4273	A1		
2217	A8	2243	E8	2265	D2	2286	D5	3210	B1	3234	D9	3255	B6	3275	A6	3295	B5	3315	A5	3341	D9	3369	B10	4214	D9	4234	E7	4254	D9	4274	D3		
2220	A8	2244	E7	2266	D2	2287	D5	3211	B3	3235	C9	3256	B6	3276	A6	3296	B5	3316	A4	3342	B4	3370	B10	4215	D9	4235	A8	4255	B4	7200	A7		
2221	A8	2245	E8	2267	D9	2288	D5	3212	C4	3236	C9	3257	B6	3277	A6	3297	B5	3317	A4	3343	C10	3371	C7	4216	D10	4236	C5	4256	D6	7201	A7		
2225	D10	2247	B6	2268	D9	2289	D4	3213	C5	3237	D9	3258	B6	3278	A6	3298	A5	3318	A4	3345	C10	3372	C7	4217	D9	4237	C5	4257	D8	7202	A7		
2226	C10	2249	B4	2269	E2	2290	D6	3216	C10	3238	E8	3259	B6	3279	A6	3299	A4	3320	B8	3346	B4	3374	E5	4218	D9	4238	D6	4258	A6	7204	D5		
2227	C10	2250	B5	2270	D2	2292	A6	3217	C9	3239	E8	3260	B6	3280	A6	3300	A4	3321	B7	3347	E3	3376	A6	4219	D8	4239	D5	4259	A7	7205	A8		
2228	C10	2251	B5	2271	D2	2294	A6	3218	B10	3240	E8	3261	B6	3281	A6	3301	A5	3322	B8	3348	E3	3377	D6	4220	A9	4240	C4	4260	A7	7206	A8		
2229	C10	2252	B4	2272	D2	2296	A6	3219	B10	3241	E8	3262	B4	3282	A6	3302	A4	3323	B8	3351	E2	3378	E2	4221	A2	4241	A4	4261	A7	7209	A6		

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

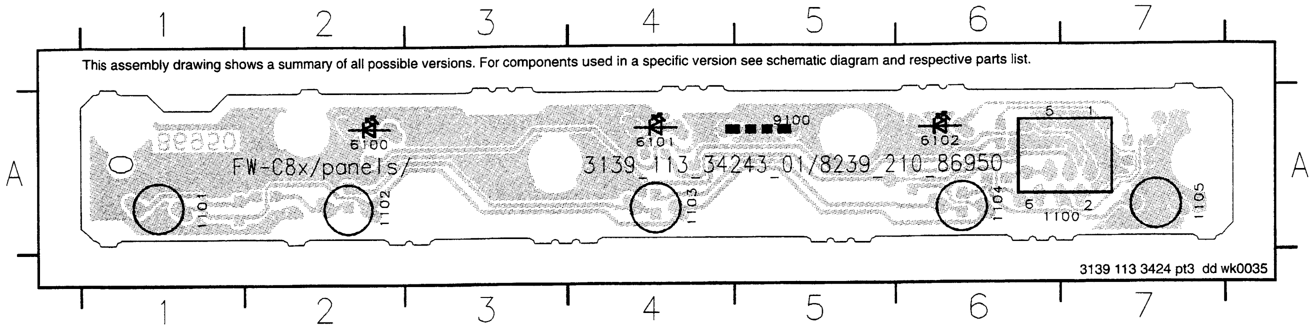


Some location on this board is prepared for both 0603 & 0805 SMDs footprint, in such locations 0603 SMDs may be substituted.

3139 113 3424 pt3 dd wk0035

KEY-CDC BOARD - COMPONENT LAYOUT

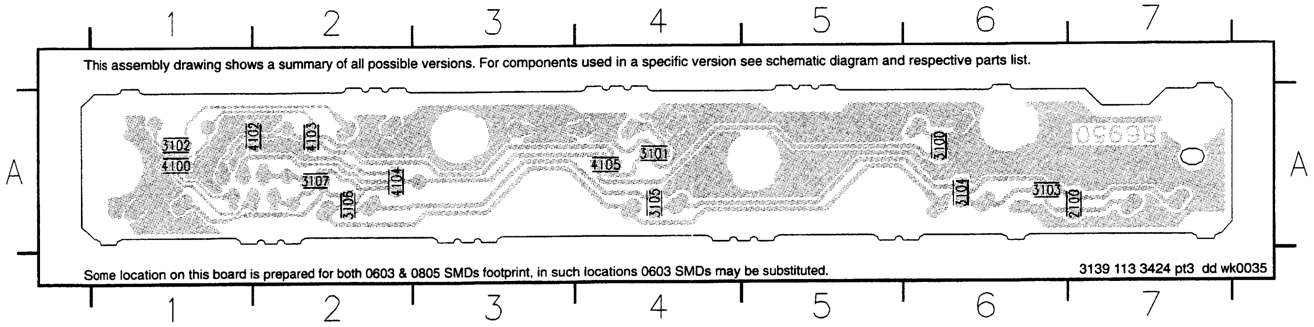
1100	A6	1101	A1	1102	A2	1103	A4	1104	A6	1105	A7	6100	A2	6101	A4	6102	A6	9100	A5


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3424 pt3 dd wk0035

KEY-CDC BOARD - CHIP LAYOUT

2100	A7	3101	A4	3103	A6	3105	A4	3107	A2	4102	A2	4104	A2
3100	A6	3102	A1	3104	A6	3106	A2	4100	A1	4103	A2	4105	A4

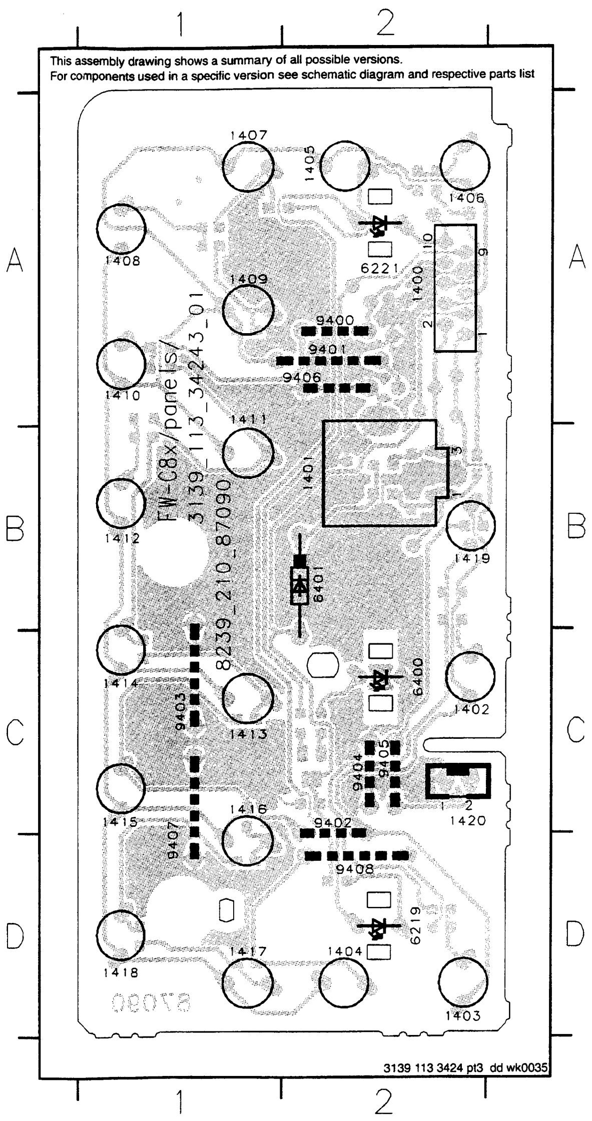

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

Some location on this board is prepared for both 0603 & 0805 SMDs footprint, in such locations 0603 SMDs may be substituted.

3139 113 3424 pt3 dd wk0035

CONTROL BOARD - COMPONENT LAYOUT

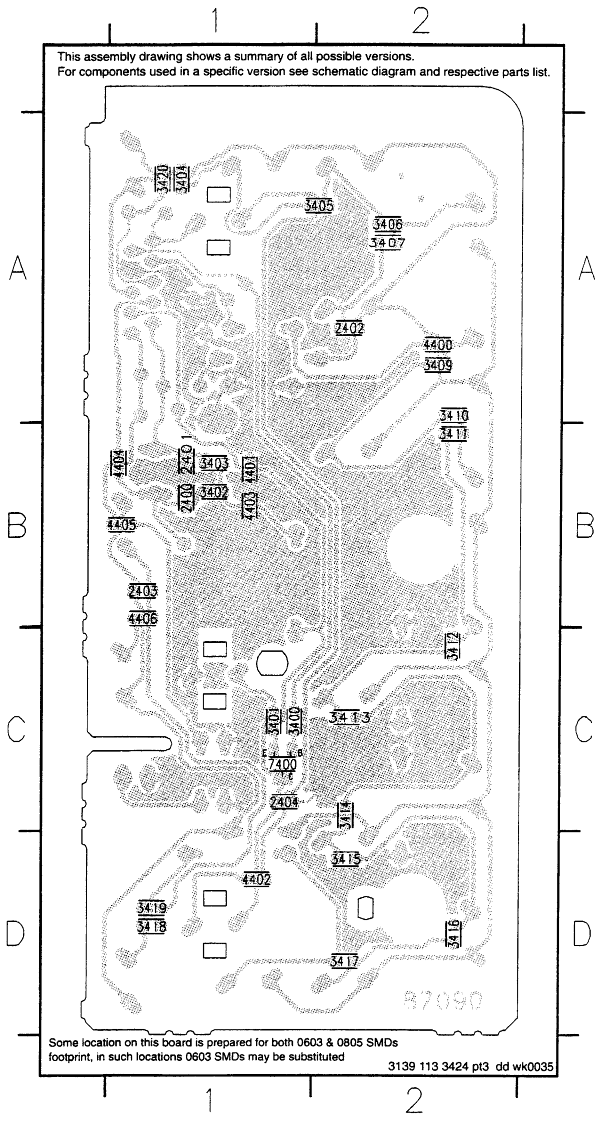
140C	A2	1407	A1	1414	C1	6219	D2	9403	C1
1401	B2	1408	A1	1415	C1	6221	A2	9404	C2
1402	C2	1409	A1	1416	C1	6400	C2	9405	C2
1403	D2	1410	A1	1417	D1	6401	B2	9406	A2
1404	D2	1411	A1	1418	D1	9400	A2	9407	D1
1405	A2	1412	B1	1419	B2	9401	A2	9408	D2
1406	A2	1413	C1	1420	C2	9402	C2		


This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list

3139 113 3424 pt3 dd wk0035

CONTROL BOARD - CHIP LAYOUT

2400	B1	3402	B1	3410	A2	3417	D2	4403	B1
2401	B1	3403	B1	3411	B2	3418	D1	4404	B1
2402	A2	3404	A1	3412	C2	3419	D1	4405	B1
2403	B1	3405	A2	3413	C2	3420	A1	4406	B1
2404	C1	3406	A2	3414	C2	4400	A2	7400	C1
3400	C1	3407	A2	3415	D2	4401	B1		
3401	C1	3409	A2	3416	D2	4402	D1		

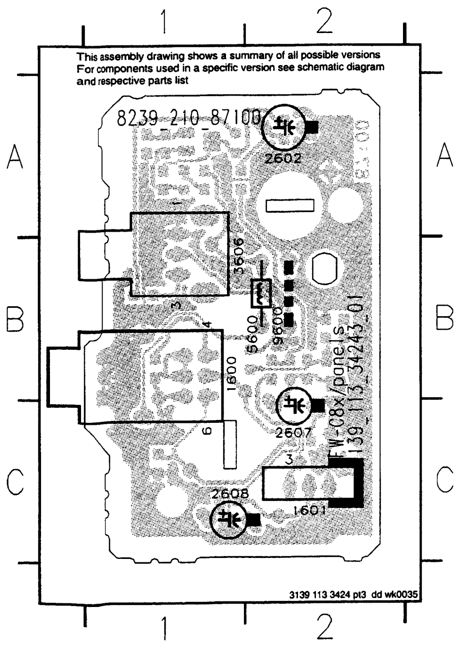

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.

Some location on this board is prepared for both 0603 & 0805 SMDs footprint, in such locations 0603 SMDs may be substituted

3139 113 3424 pt3 dd wk0035

KARAOKE BOARD - COMPONENT LAYOUT

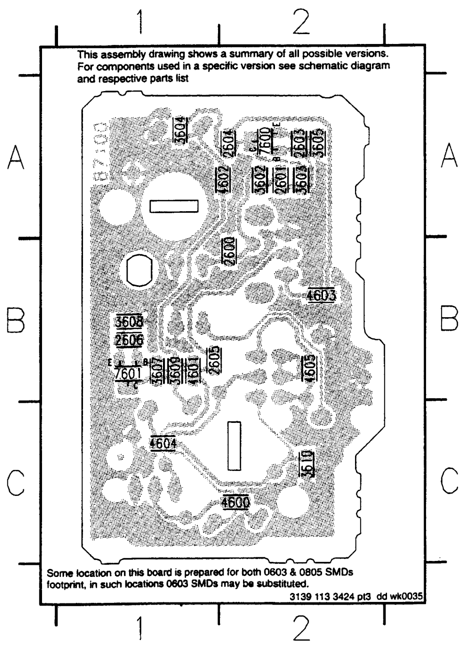
1600	B1	2607	C2	5600	B2
1601	C2	2608	C1	9600	B2
2602	A2	3606	B1		


This assembly drawing shows a summary of all possible versions
For components used in a specific version see schematic diagram and respective parts list

3139 113 3424 pt3 dd wk0035

KARAOKE BOARD - CHIP LAYOUT

2600	B2	3604	A1	4602	A2
2601	A2	3605	A2	4603	B2
2603	A2	3607	B1	4604	C1
2604	A2	3608	B1	4605	B2
2605	B1	3609	B1	7600	A2
2606	B1	3610	C2	7601	B1
3602	A2	4600	C2		
3603	A2	4601	B1		

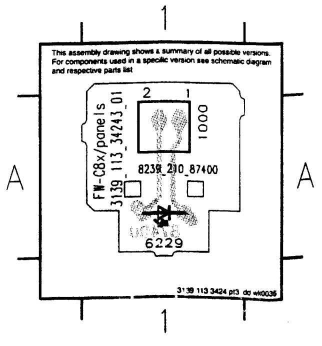

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list

Some location on this board is prepared for both 0603 & 0805 SMDs footprint, in such locations 0603 SMDs may be substituted.

3139 113 3424 pt3 dd wk0035

BLUE STRIP LED BOARD - COMPONENT LAYOUT

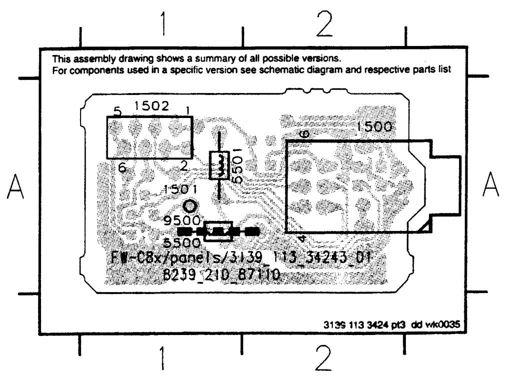
1000	A1	6229	A1


This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list

3139 113 3424 pt3 dd wk0035

HEADPHONE BOARD - COMPONENT LAYOUT

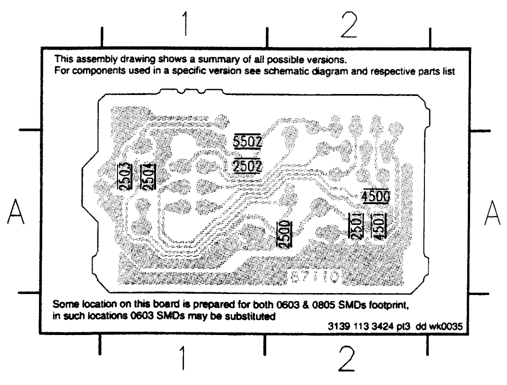
1500	A2	1502	A1	5501	A1
1501	A1	5500	A1	9500	A1


This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list

3139 113 3424 pt3 dd wk0035

HEADPHONE BOARD - CHIP LAYOUT

2500	A2	2502	A1	2504	A1	4501	A2
2501	A2	2503	A1	4500	A2	5502	A1

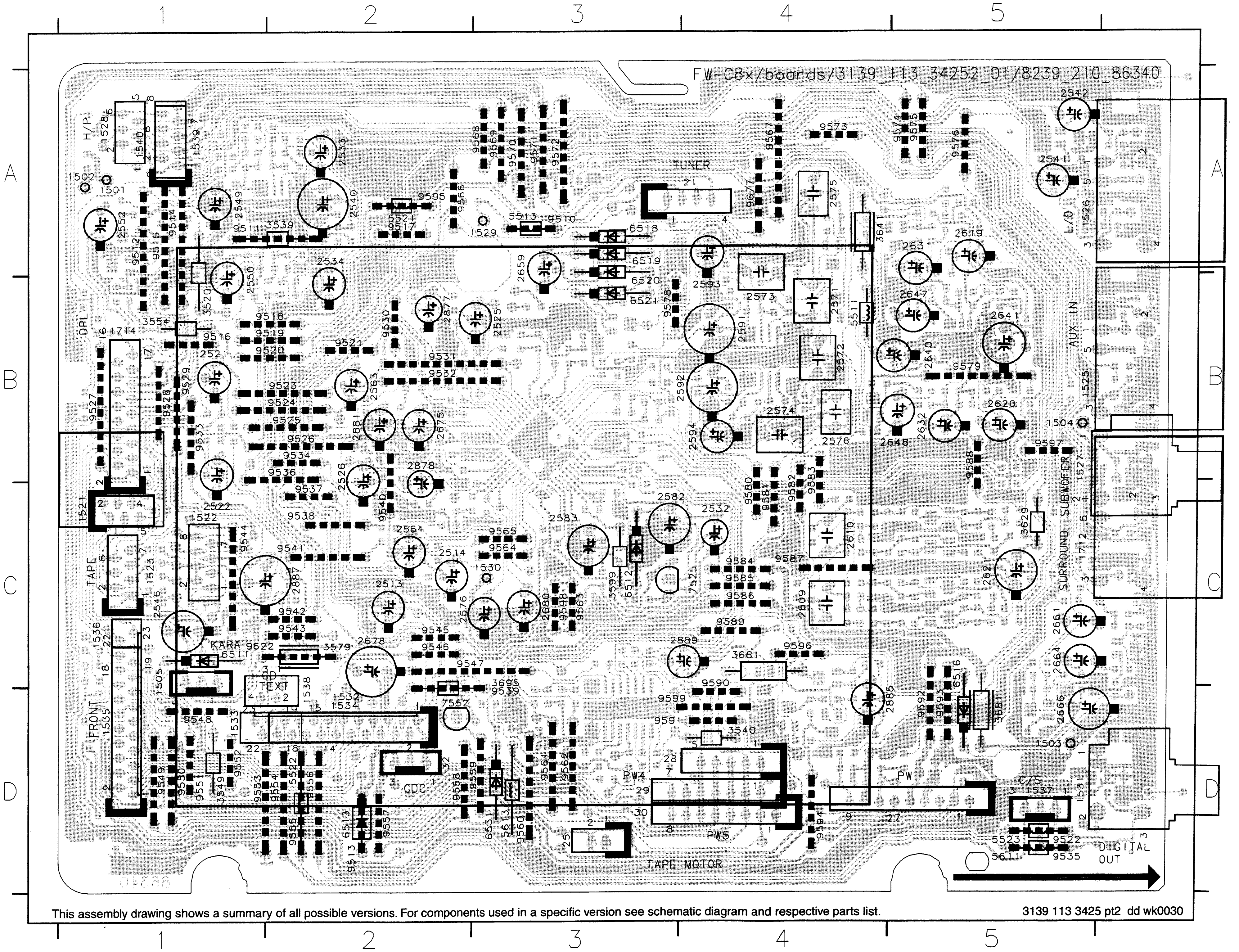

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list

Some location on this board is prepared for both 0603 & 0805 SMDs footprint, in such locations 0603 SMDs may be substituted

3139 113 3424 pt3 dd wk0035

AF8 BOARD (pt.2)

AF8 BOARD - COMPONENT LAYOUT

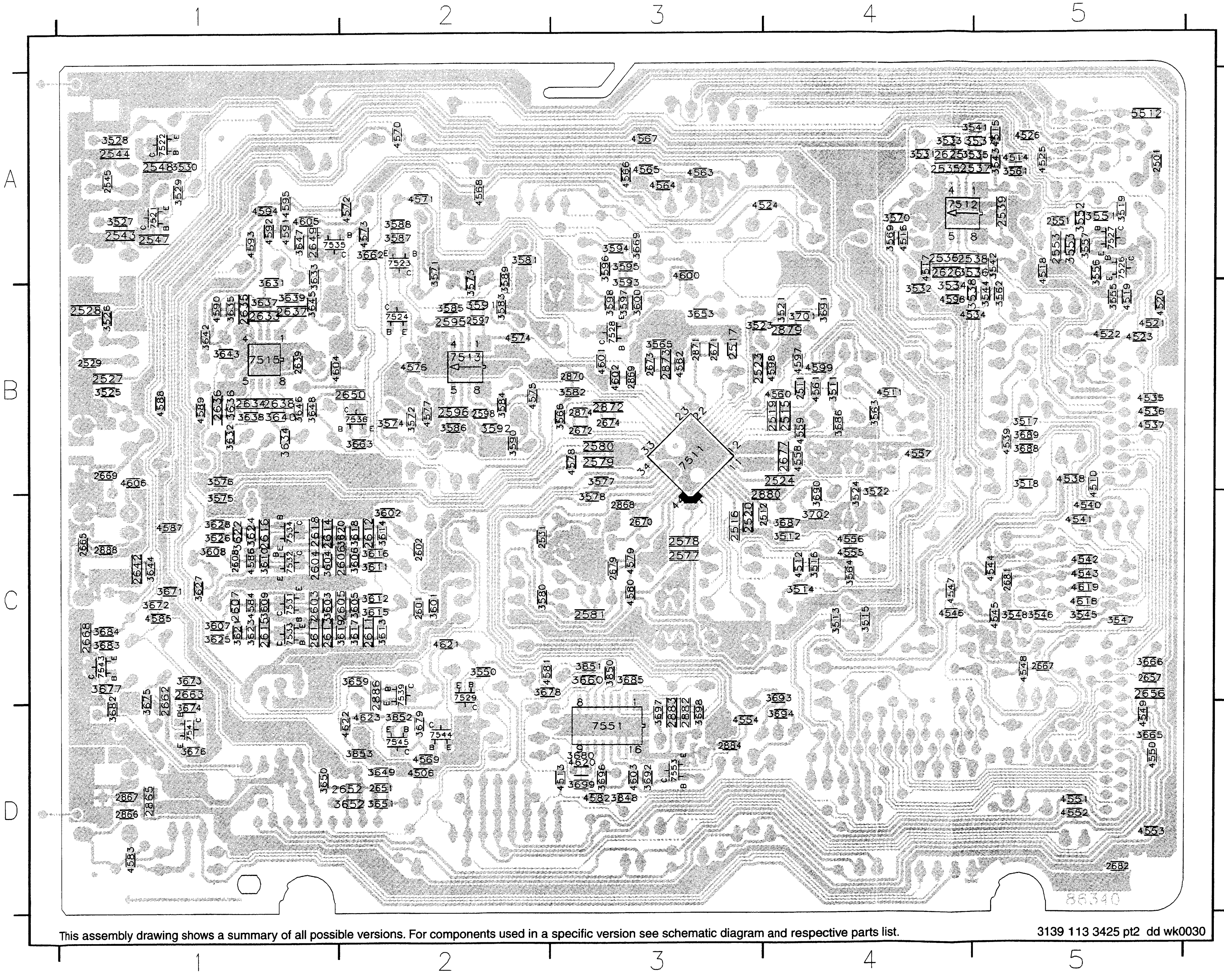


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3425 pt2 dd wk0030

21	A4	2632	B5	9530	B2	9622	C1
25	D3	2640	B5	9531	B2	9677	A4
27	D5	2641	B5	9532	B2		
28	D3	2647	B5	9533	B1		
29	D3	2648	B5	9534	B2		
30	D3	2659	A3	9535	D5		
32	D2	2661	C5	9536	B2		
1501	A1	2664	C5	9537	C2		
1502	A1	2666	D5	9538	C2		
1503	D5	2675	B2	9539	D3		
1504	B5	2676	C2	9540	C2		
1505	C1	2678	C2	9541	C2		
1521	C1	2680	C3	9542	C2		
1522	C1	2877	B2	9543	C2		
1523	C1	2878	B2	9544	C1		
1525	B5	2881	B2	9545	C2		
1526	A5	2885	D5	9546	C2		
1527	B5	2887	C2	9547	C2		
1528	A1	2889	C4	9548	D1		
1529	A3	3520	B1	9549	D1		
1530	C3	3539	A2	9550	D1		
1531	D5	3540	D4	9551	D1		
1532	D2	3549	D1	9552	D1		
1533	D1	3554	B1	9553	D1		
1534	D2	3579	C2	9554	D2		
1535	D1	3599	C3	9555	D2		
1536	C1	3629	C5	9556	D2		
1537	D5	3641	A4	9557	D2		
1538	D2	3661	C4	9558	D2		
1539	A1	3681	D5	9559	D3		
1540	A1	3695	C3	9560	D3		
1712	C5	5511	B4	9561	D3		
1714	B1	5513	A3	9562	D3		
2513	C2	5521	A2	9563	C3		
2514	C2	5522	D2	9564	C3		
2521	B1	5523	D5	9565	C3		
2522	C1	5611	D5	9566	A2		
2525	B3	5613	D3	9567	A4		
2526	B2	6511	C1	9568	A3		
2532	C4	6512	C3	9569	A3		
2533	A2	6513	D2	9570	A3		
2534	A2	6516	C5	9571	A3		
2540	A2	6518	A3	9572	A3		
2541	A5	6519	A3	9573	A4		
2542	A5	6520	B3	9574	A5		
2546	C1	6521	B3	9575	A5		
2549	A1	6531	D3	9576	A5		
2550	B1	7525	C4	9578	B3		
2552	A1	7552	D2	9579	B5		
2563	B2	9510	A3	9580	C4		
2564	C2	9511	A1	9581	C4		
2571	B4	9512	A1	9582	C4		
2572	B4	9513	D2	9583	C4		
2573	B4	9514	A1	9584	C4		
2574	B4	9515	A1	9585	C4		
2575	A4	9516	B1	9586	C4		
2576	B4	9517	A2	9587	C4		
2582	C3	9518	B2	9588	B5		
2583	C3	9519	B2	9589	C4		
2591	B4	9520	B2	9590	C4		
2592	B3	9521	B2	9591	D3		
2593	B4	9522	D5	9592	D5		
2594	B4	9523	B2	9593	D5		
2609	C4	9524	B2	9594	D4		
2610	C4	9525	B2	9595	A2		
2619	A5	9526	B2	9596	C4		
2620	B5	9527	B1	9597	B5		
2621	C5	9528	B1	9598	C3		
2631	A5	9529	B1	9599	D3		

AF8 BOARD - CHIP LAYOUT



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3425 pt2 dd wk0030

2501	A5	2665	C1	3555	B5	3633	A1	4517	A4	4593	A1
2511	B4	2667	C5	3556	A5	3634	B1	4518	A5	4594	A1
2512	C3	2668	C1	3557	A5	3635	B1	4519	B5	4595	A1
2515	B4	2669	B1	3561	A5	3636	B1	4520	B5	4596	B4
2516	C3	2670	C3	3562	B5	3637	B1	4521	B5	4597	B4
2517	B3	2671	B3	3563	B4	3638	B1	4522	B5	4598	B4
2519	B4	2672	B3	3564	C4	3639	B1	4523	B5	4599	B4
2520	C3	2673	B3	3565	B3	3640	B1	4524	A4	4600	A3
2523	B3	2674	B3	3566	B3	3642	B1	4525	A5	4601	B3
2524	B4	2677	B4	3569	A4	3643	B1	4526	A5	4602	B3
2527	B1	2679	C3	3570	A4	3644	C1	4534	B4	4603	D3
2528	B1	2681	C5	3571	A2	3645	B1	4535	B5	4604	B1
2529	B1	2682	D5	3572	B2	3646	B1	4536	B5	4605	A1
2531	C2	2865	D1	3573	B2	3647	A1	4537	B5	4606	B1
2535	A4	2866	D1	3574	B2	3648	B1	4538	B5	4618	C5
2536	A4	2867	D1	3575	C1	3649	D2	4539	B5	4619	C5
2537	A5	2868	C3	3576	B1	3650	D1	4540	C5	4620	D3
2538	A4	2869	B3	3577	B3	3651	D2	4541	C5	4621	C2
2539	A5	2870	B3	3578	C3	3652	D2	4542	C5	4622	D2
2543	A1	2871	B3	3580	C2	3653	B3	4543	C5	4623	D2
2544	A1	2872	B3	3581	A2	3659	C2	4544	C5	5512	A5
2545	A1	2873	B3	3582	B3	3660	C3	4545	C5	7511	B3
2547	A1	2874	B3	3583	B2	3662	A2	4546	C4	7512	A4
2548	A1	2879	B4	3584	B2	3663	B2	4547	C4	7513	B2
2551	A5	2880	C4	3585	B2	3665	D5	4548	C5	7515	B1
2553	A5	2882	D3	3586	B2	3666	C5	4549	D5	7521	A1
2577	C3	2883	D3	3587	A2	3669	A3	4550	D5	7522	A1
2578	C3	2884	D3	3588	A2	3671	C1	4551	D5	7523	A2
2579	B3	2886	C2	3589	A2	3672	C1	4552	D5	7524	B2
2580	B3	2888	C1	3590	B2	3673	C1	4553	D5	7526	A5
2581	C3	3511	B4	3591	B2	3674	D1	4554	D3	7527	A5
2595	B2	3512	C4	3592	B2	3675	C1	4555	C4	7528	B3
2596	B2	3513	C4	3593	B3	3676	D1	4556	C4	7529	C2
2597	B2	3514	C4	3594	A3	3677	C1	4557	B4	7531	C1
2598	B2	3515	C4	3595	A3	3678	C2	4558	B4	7532	C1
2601	C2	3516	C4	3596	A3	3679	D2	4559	B4	7533	C1
2602	C2	3517	B5	3597	B3	3680	D3	4560	B4	7534	C1
2603	C1	3518	B5	3598	B3	3682	D1	4561	B4	7535	A1
2604	C1	3519	A5	3600	B3	3683	C1	4562	B3	7536	B2
2605	C2	3521	B4	3601	C2	3684	C1	4563	A3	7539	C2
2606	C2	3522	C4	3602	C2	3685	C3	4564	A3	7541	D1
2607	C1	3523	B3	3603	C1	3686	B4	4565	A3	7543	C1
2608	C1	3524	C4	3604	C1	3687	C4	4566	A3	7544	D2
2611	C2	3525	B1	3605	C2	3688	B5	4567	A3	7545	D2
2612	C2	3526	B1	3606	C2	3689	B5	4568	A2	7551	D3
2613	C1	3527	A1	3607	C1	3690	C4	4569	D2	7553	D3
2614	C1	3528	A1	3608	C1	3691	B4	4570	A2		
2615	C1	3529	A1	3609	C1	3692	D3	4571	A2		
2616	C1	3530	A1	3610	C1	3693	C4	4572	A2		
2617	C1	3531	A4	3611	C2	3694	D4	4573	A2		
2618	C1	3532	B4	3612	C2	3696	D3	4574	B2		
2625	A4	3533	A4	3613	C2	3697	D3	4575	B2		
2626	A4	3534	B4	3614	C2	3698	D3	4576	B2		
2633	B1	3535	A5	3615	C2	3699	D3	4577	B2		
2634	B1	3536	A4	3616	C2	3701	B4	4578	B3		
2635	B1	3537	A5	3617	C2	3702	C4	4579	C3		
2636	B1	3538	B4	3618	C2	3848	D3	4580	C3		
2637	B1	3541	A5	3619	C2	3850	C3	4581	C2		
2638	B1	3542	A5	3620	C2	3851	C3	4582	D3		
2639	B1	3543	A5	3621	C1	3852	D2	4583	D1		
2642	C1	3544	B5	3622	C1	3853	D2	4584	C1		
2649	A1	3545	C5	3623	C1	4506	D2	4585	C1		
2650	B2	3546	C5	3624	C1	4510	B5	4586	C1		
2651	D2	3547	C5	3625	C1	4511	B4	4587	C1		
2652	D2	3548	C5	3626	C1	4512	C4	4588	B1		
2656	C5	3550	C2	3627	C1	4513	D3	4589	B1		
2657	C5	3551	A5	3628	C1	4514	A5	4590	B1		
2662	C1	3552	A5	3631	A1	4515	A5	4591	A1		
2663	C1	3553	A5	3632	B1	4516	A4	4592	A1		

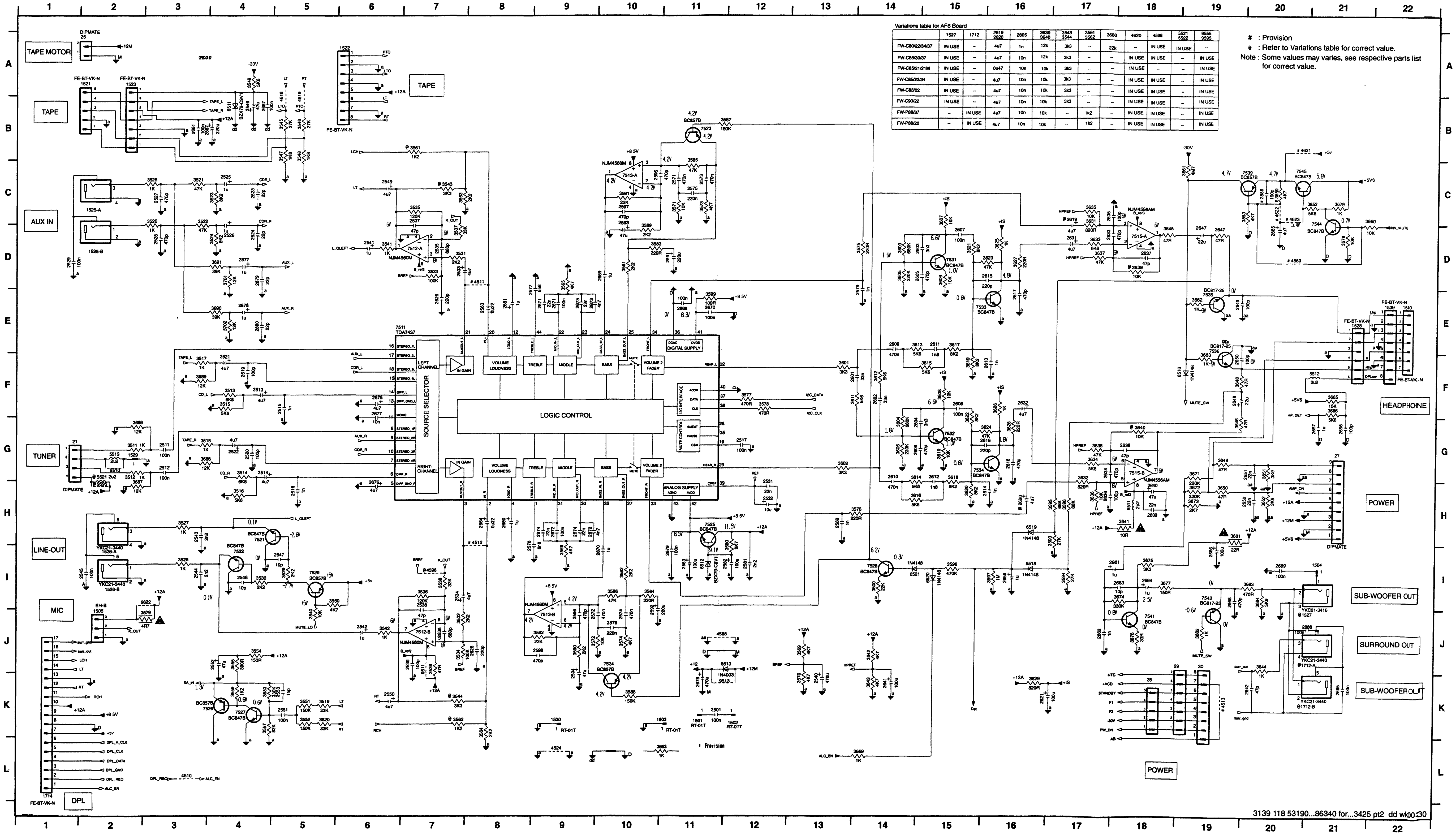
AF8 BOARD - CIRCUIT DIAGRAM (PART 1)

21 G1	1505 J2	1529 G2	2513 F4	2524 D4	2535 D7	2545 I2	2564 H8	2580 H13	2597 C10
25 A1	1521 A2	1530 K9	2514 G4	2525 C4	2536 J7	2546 B4	2571 C11	2581 I12	2598 J9
27 G21	1522 A6	1539 E22	2515 F5	2526 D4	2537 C7	2547 I5	2572 J9	2582 I12	2601 F13
28 K18	1523 A2	1540 E22	2516 H5	2527 C3	2538 I7	2548 I4	2573 C11	2583 I11	2602 F14
29 J18	1525-A C2	1712-A J20	2517 G12	2528 D3	2539 J7	2549 C6	2574 J10	2591 D11	2603 D14
30 J19	1525-B D2	1712-B K20	2519 F4	2529 D1	2540 K13	2550 K6	2575 C11	2592 J10	2604 G14
1501 K11	1526-A I2	1714 L1	2520 G4	2531 H12	2541 D6	2551 K5	2576 J10	2593 D10	2605 D14
1502 K12	1526-B I2	2501 K11	2521 F4	2532 H12	2542 J6	2552 J4	2577 E8	2594 K9	2606 G14
1503 K11	1527 J20	2511 G3	2522 G4	2533 D7	2543 H3	2553 K5	2578 I8	2595 C10	2607 D15
1504 I21	1528 E21	2512 G3	2523 C4	2534 I7	2544 I3	2563 E8	2579 E14	2596 J9	2608 F15

2609 E14	2619 C17	2636 H17	2650 F19	2665 K21	2675 F6	2871 E9	2886 C20	3518 G3	3528 I3
2610 G14	2620 H16	2637 D18	2651 G20	2666 I19	2676 H6	2872 H9	2887 B3	3519 K5	3529 I5
2611 E15	2621 K16	2638 G18	2652 H20	2667 B4	2677 F6	2873 E9	2888 J21	3520 K5	3530 I4
2612 G15	2625 E7	2639 H18	2656 G21	2668 I19	2678 K11	2874 H9	3511 G2	3521 C3	3531 D7
2613 F16	2626 J8	2640 H18	2657 G21	2669 I20	2679 I11	2877 D4	3512 G2	3522 C3	3532 J7
2614 H16	2631 D17	2641 K14	2659 I16	2670 E11	2680 H6	2878 E4	3513 F4	3523 C4	3533 D7
2615 D16	2632 F16	2642 K20	2661 I18	2671 E9	2681 B3	2879 D4	3514 G4	3524 D4	3534 J7
2616 G16	2633 D17	2647 D19	2662 J17	2672 H9	2866 E11	2880 E4	3515 F4	3525 C3	3535 C7
2617 E16	2634 G17	2648 F19	2663 I18	2673 E9	2869 D10	2881 E8	3516 H4	3526 C3	3536 I7
2618 G16	2635 C17	2649 E19	2664 I18	2674 H9	2870 I10	2885 D20	3517 F3	3527 H3	3537 D7

3538 I7	3548 B5	3561 B7	3573 C11	3583 D10	3593 H17	3603 D14	3613 E14	3623 D16	3634 G17
3539 J7	3549 A4	3562 K7	3574 J10	3584 I10	3594 I17	3604 G14	3614 G14	3624 G16	3635 C17
3540 J5	3550 I5	3563 C7	3575 D14	3585 B11	3595 H17	3605 D14	3615 F15	3625 D16	3636 H17
3541 D6	3551 K5	3564 K8	3576 H14	3586 I10	3596 H17	3606 G14	3616 H14	3626 F16	3637 D17
3542 J6	3552 K5	3565 D9	3577 F12	3587 B11	3597 I16	3607 C15	3617 E15	3627 D16	3638 G17
3543 C7	3553 K4	3566 I9	3578 F12	3588 K10	3598 I15	3608 F15	3618 G15	3628 G16	3639 D18
3544 K7	3554 J4	3569 J13	3579 J3	3589 D10	3599 E11	3609 D15	3619 F15	3629 K16	3640 G18
3545 B5	3555 J4	3570 K13	3580 I12	3590 J9	3600 I14	3610 G15	3620 H15	3631 C17	3641 H18
3546 B5	3556 K4	3571 C11	3581 D10	3591 C10	3601 F13	3611 F13	3621 D15	3632 G17	3642 J14
3547 B5	3557 K4	3572 J9	3582 I10	3592 J9	3602 G13	3612 F14	3622 G15	3633 D17	3643 K14

3644 J20	3659 C20	3673 H19	3684 I20	3853 C19	4619 B5	6513 J12	7513-B J9	7528 I14	7543 I19
3645 D18	3660 C21	3674 I18	3686 G2	4510 L3	4621 B20	6516 F19	7515-A D18	7529 I5	7544 C21
3646 G19	3661 C19	3675 I18	3687 H2	4511 D8	4622 C20	6518 I16	7515-B G18	7531 D15	7545 C20
3647 D19	3662 E19	3676 J18	3688 G3	4512 H8	4623 C20	6519 H16	7521 H4	7532 G15	9510 G2
3648 F19	3663 F19	3677 I18	3689 F3	4513 K19	5511 H18	6520 I15	7522 I4	7533 E15	9511 J7
3649 G19	3665 F21	3678 D21	3690 E4	4524 L9	5512 F21	6521 I14	7523 B11	7534 G15	9513 K12
3650 H19	3666 F21	3679 C21	3691 D4	4569 D20	5513 G2	7511 E6	7524 J10	7535 E19	9595 H2
3651 G20	3669 L14	3681 H19	3701 D4	4588 J11	5521 G2	7512-A D7	7525 H11	7536 E19	9622 I3
3652 H20	3671 G19	3682 J19	3702 E4	4596 I7	6511 B4	7512-B J7	7526 K4	7539 C19	
3653 L11	3672 H19	3683 I20	3852 C21	4618 B5	6512 I11	7513-A C10	7527 K4	7541 J18	



Variations table for AF8 Board

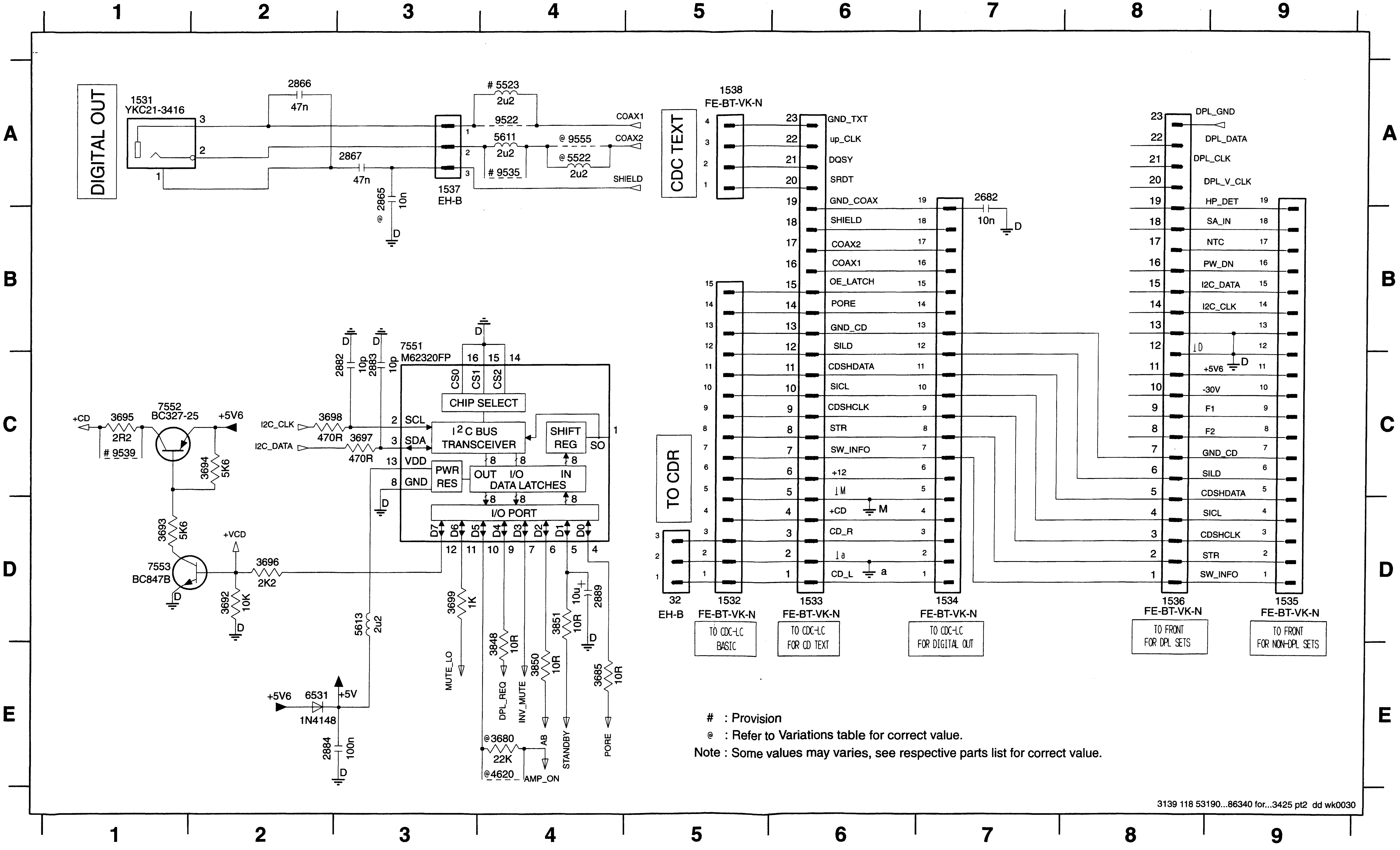
	1527	1712	2619 2620	2865	3639 3640	3543 3544	3561 3562	3680	4620	4596	5521 5522	9555 9595
FW-C80/22/34/37	IN USE	--	4u7	1n	12k	3k3	--	22k	–	IN USE	IN USE	--
FW-C85/30/37	IN USE	--	4u7	10n	12k	3k3	--	--	IN USE	IN USE	--	IN USE
FW-C85/21/21M	IN USE	--	0u47	10n	10k	3k3	--	--	IN USE	--	–	IN USE
FW-C85/22/34	IN USE	--	4u7	10n	10k	3k3	--	–	IN USE	IN USE	--	IN USE
FW-C83/22	IN USE	--	4u7	10n	10k	3k3	--	--	IN USE	IN USE	--	IN USE
FW-C90/22	IN USE	--	4u7	10n	10k	3k3	--	--	IN USE	IN USE	--	IN USE
FW-P88/37	--	IN USE	4u7	10n	10k	--	1k2	–	IN USE	IN USE	--	IN USE
FW-P88/22	--	IN USE	4u7	10n	10k	--	1k2	--	IN USE	IN USE	–	IN USE

# : Provision
@ : Refer to Variations table for correct value.
Note : Some values may varies, see respective parts list for correct value.

3139 118 53190...86340 for...3425 pt2 dd wk00□30

AF8 BOARD - CIRCUIT DIAGRAM (PART 2)

32 D5	1532 D5	1534 D7	1536 D8	1538 A5	2865 A3	2867 A3	2883 C3	2889 D4	3685 E4	3693 D1	3695 C1	3697 C3	3699 D3	3850 E4	4620 E4	5523 A4	5613 D3	7551 B3	7553 D1	9535 A4	9555 A4
1531 A1	1533 D6	1535 D9	1537 A3	2682 A7	2866 A2	2882 C3	2884 E2	3680 E4	3692 D2	3694 C2	3696 D2	3698 C2	3848 E4	3851 D4	5522 A4	5611 A4	6531 E2	7552 C1	9522 A4	9539 C1	



DIGITAL OUT
1531 YKC21-3416
2866 47n
2867 47n
@ 2865 10n
1537 EH-B
# 5523 2u2
9522
5611 2u2
# 9535
@ 9555
@ 5522 2u2
COAX1
COAX2
SHIELD
CDC TEXT
1538 FE-BT-VK-N
GND_TXT
up_CLK
DQSY
SRDT
GND_COAX
SHIELD
COAX2
COAX1
OE_LATCH
PORE
GND_CD
SILD
CDSHDATA
SICL
CDSHCLK
STR
SW_INFO
+12
+CD
CD_R
CD_L
2682 10n
TO CDR
32 EH-B
1532 FE-BT-VK-N
TO CDC-LC BASIC
1533 FE-BT-VK-N
TO CDC-LC FOR CD TEXT
1534 FE-BT-VK-N
TO CDC-LC FOR DIGITAL OUT
DPL_GND
DPL_DATA
DPL_CLK
DPL_V_CLK
HP_DET
SA_IN
NTC
PW_DN
I2C_DATA
I2C_CLK
+5V6
-30V
F1
F2
1536 FE-BT-VK-N
TO FRONT FOR DPL SETS
1535 FE-BT-VK-N
TO FRONT FOR NON-DPL SETS
7551 M62320FP
CHIP SELECT
I2C BUS TRANSCEIVER
SHIFT REG
PWR RES
OUT I/O IN DATA LATCHES
I/O PORT
SCL
SDA
VDD
GND
SO
2882 10p
2883 10p
I2C_CLK
I2C_DATA
3698 470R
3697 470R
+CD
3695 2R2
# 9539
7552 BC327-25
+5V6
3694 5K6
3693 5K6
+VCD
7553 BC847B
3696 2K2
3692 10K
5613 2u2
+5V6
6531 1N4148
+5V
2884 100n
3699 1K
MUTE_LO
3848 10R
DPL_REQ
INV_MUTE
3850 10R
AB
3851 10R
STANDBY
2889 10u
3685 10R
PORE
@3680 22K
@4620
AMP_ON

: Provision

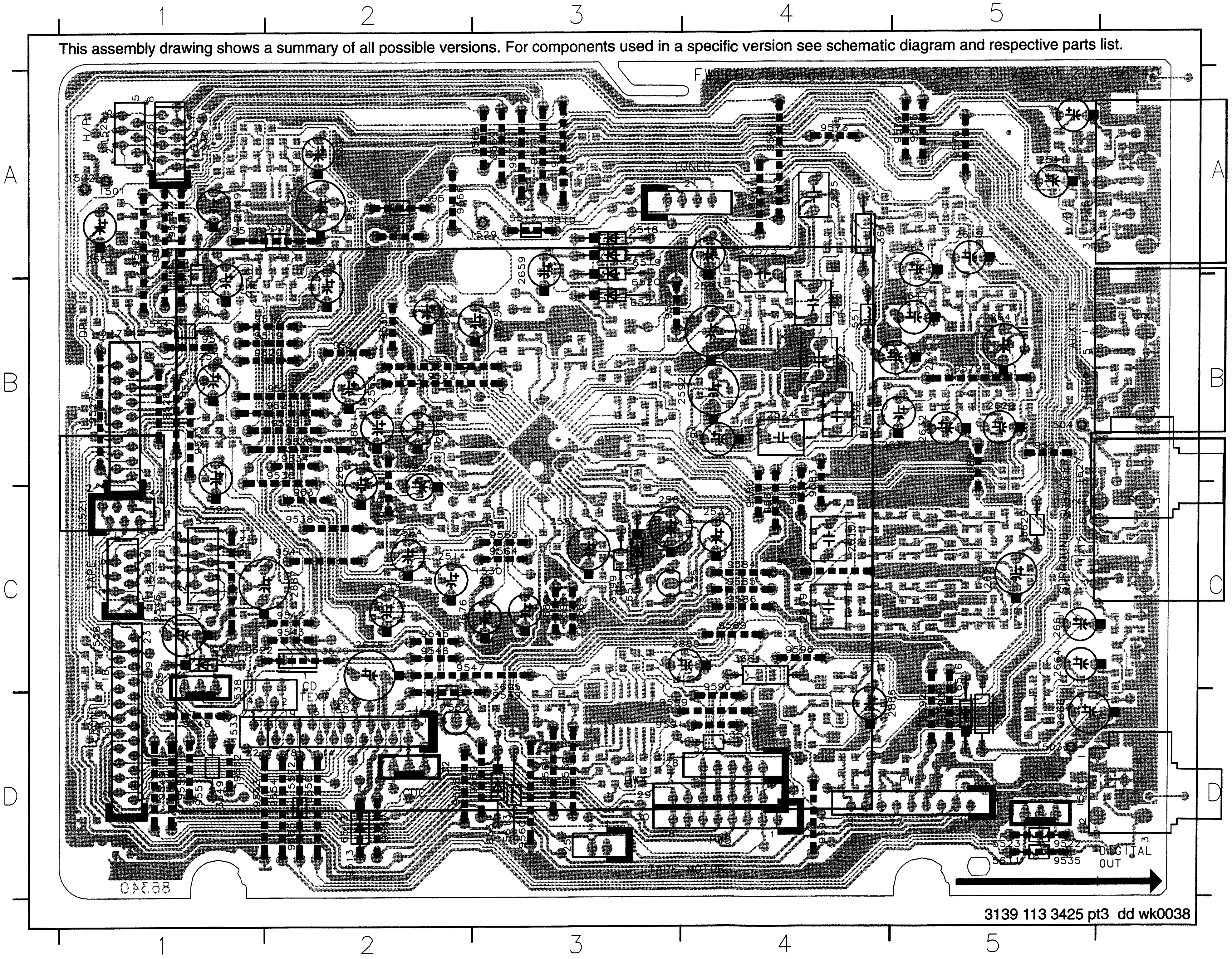
@ : Refer to Variations table for correct value.

Note : Some values may varies, see respective parts list for correct value.

3139 118 53190...86340 for...3425 pt2 dd wk0030

AF8 BOARD (pt.3)

AF8 BOARD - COMPONENT LAYOUT

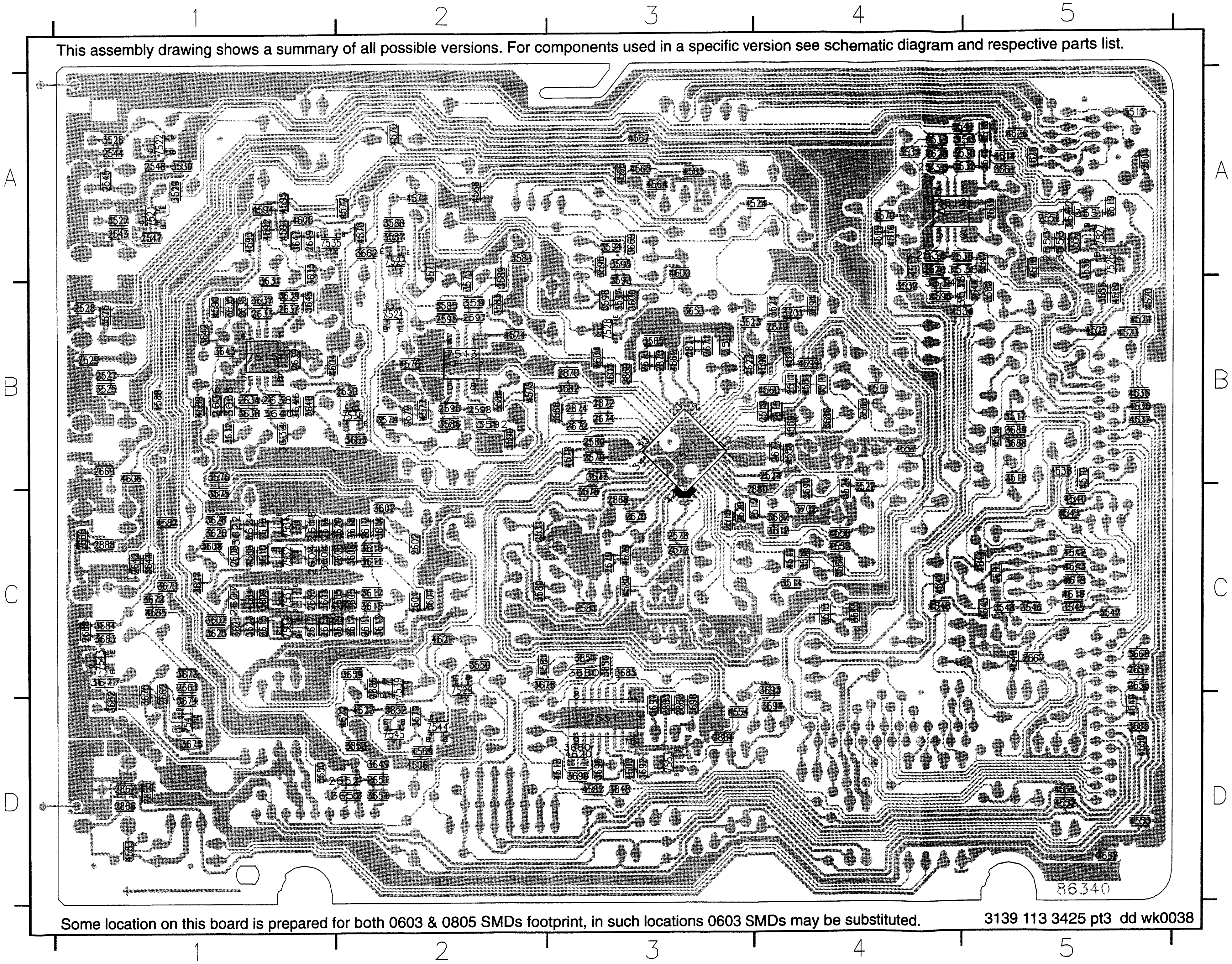


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3425 pt3 dd wk0038

21	A4	2632	B5	9530	B2	9622	C1
25	D3	2640	B5	9531	B2	9677	A4
27	D5	2641	B5	9532	B2		
28	D3	2647	B5	9533	B1		
29	D3	2648	B5	9534	B2		
30	D3	2659	A3	9535	D5		
32	D2	2661	C5	9536	B2		
1501	A1	2664	C5	9537	C2		
1502	A1	2666	D5	9538	C2		
1503	D5	2675	B2	9539	D3		
1504	B5	2676	C2	9540	C2		
1505	C1	2678	C2	9541	C2		
1521	C1	2680	C3	9542	C2		
1522	C1	2877	B2	9543	C2		
1523	C1	2878	B2	9544	C1		
1525	B5	2881	B2	9545	C2		
1526	A5	2885	D5	9546	C2		
1527	B5	2887	C2	9547	C2		
1528	A1	2889	C4	9548	D1		
1529	A3	3520	B1	9549	D1		
1530	C3	3539	A2	9550	D1		
1531	D5	3540	D4	9551	D1		
1532	D2	3549	D1	9552	D1		
1533	D1	3554	B1	9553	D1		
1534	D2	3579	C2	9554	D2		
1535	D1	3599	C3	9555	D2		
1536	C1	3629	C5	9556	D2		
1537	D5	3641	A4	9557	D2		
1538	D1	3661	C4	9558	D2		
1539	A1	3681	D5	9559	D3		
1540	A1	3695	C3	9560	D3		
1712	C5	5511	B4	9561	D3		
1714	B1	5513	A3	9562	D3		
2513	C2	5521	A2	9563	C3		
2514	C2	5522	D2	9564	C3		
2521	B1	5523	D5	9565	C3		
2522	C1	5611	D5	9566	A2		
2525	B3	5613	D3	9567	A4		
2526	B2	6511	C1	9568	A3		
2532	C4	6512	C3	9569	A3		
2533	A2	6513	D2	9570	A3		
2534	A2	6516	C5	9571	A3		
2540	A2	6518	A3	9572	A3		
2541	A5	6519	A3	9573	A4		
2542	A5	6520	B3	9574	A5		
2546	C1	6521	B3	9575	A5		
2549	A1	6531	D3	9576	A5		
2550	B1	7525	C4	9578	B3		
2552	A1	7552	D2	9579	B5		
2563	B2	9510	A3	9580	C4		
2564	C2	9511	A1	9581	C4		
2571	B4	9512	A1	9582	C4		
2572	B4	9513	D2	9583	C4		
2573	A4	9514	A1	9584	C4		
2574	B4	9515	A1	9585	C4		
2575	A4	9516	B1	9586	C4		
2576	B4	9517	A2	9587	C4		
2582	C3	9518	B2	9588	B5		
2583	C3	9519	B2	9589	C4		
2591	B4	9520	B2	9590	C4		
2592	B3	9521	B2	9591	D3		
2593	B4	9522	D5	9592	D5		
2594	B4	9523	B2	9593	D5		
2609	C4	9524	B2	9594	D4		
2610	C4	9525	B2	9595	A2		
2619	A5	9526	B2	9596	C4		
2620	B5	9527	B1	9597	B5		
2621	C5	9528	B1	9598	C3		
2631	A5	9529	B1	9599	D3		

AF8 BOARD - CHIP LAYOUT



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

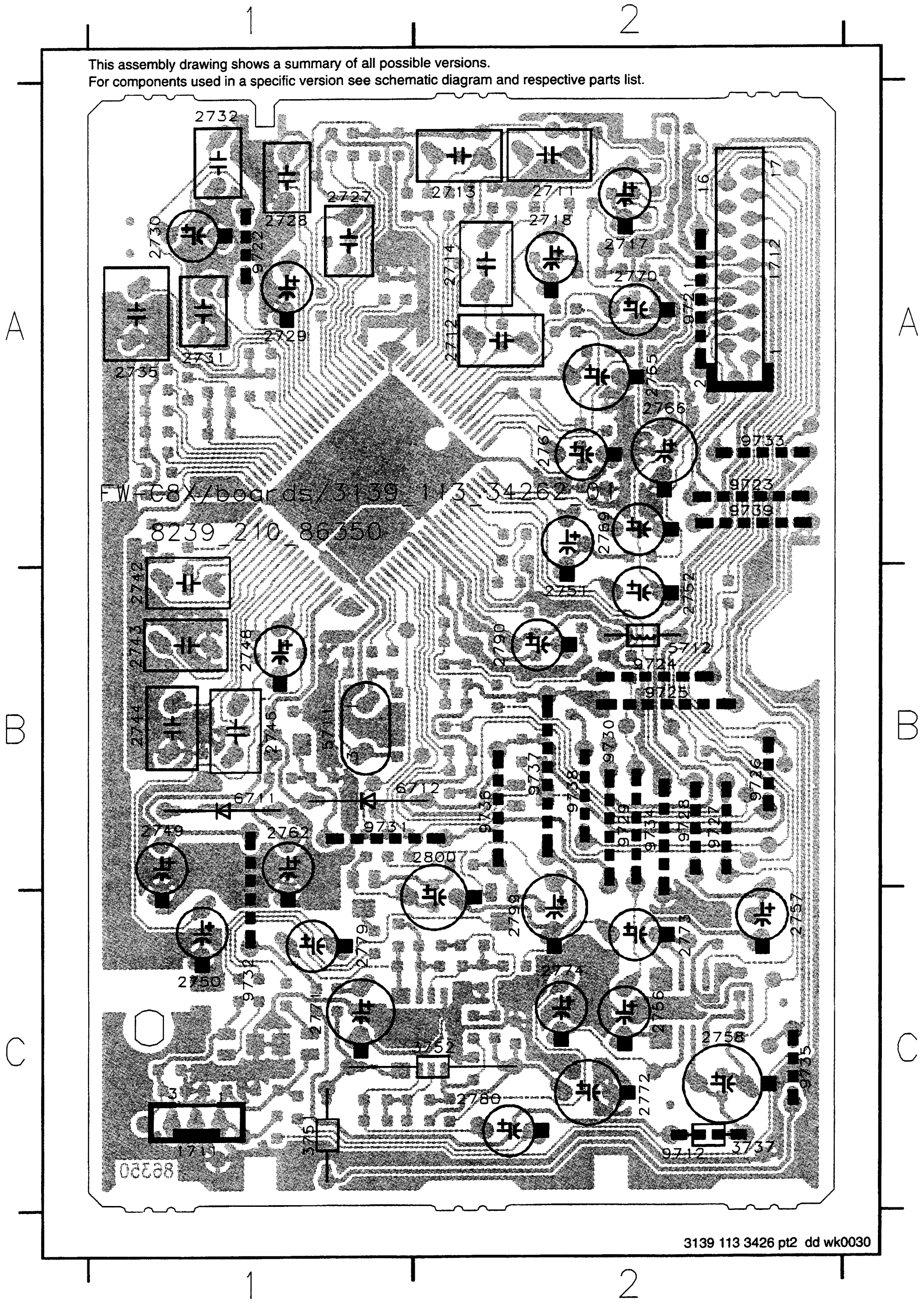
Some location on this board is prepared for both 0603 & 0805 SMDs footprint, in such locations 0603 SMDs may be substituted.

3139 113 3425 pt3 dd wk0038

2501	A5
2511	B4
2512	C3
2515	B4
2516	C3
2517	B3
2519	B4
2520	C3
2523	B3
2524	B4
2527	B1
2528	B1
2529	B1
2531	C2
2535	A4
2536	A4
2537	A5
2538	A4
2539	A5
2543	A1
2544	A1
2545	A1
2547	A1
2548	A1
2551	A5
2553	A5
2577	C3
2578	C3
2579	B3
2580	B3
2581	C3
2595	B2
2596	B2
2597	B2
2598	B2
2601	C2
2602	C2
2603	C1
2604	C1
2605	C2
2606	C2
2607	C1
2608	C1
2611	C2
2612	C2
2613	C1
2614	C1
2615	C1
2616	C1
2617	C1
2618	C1
2625	A4
2626	A4
2633	B1
2634	B1
2635	B1
2636	B1
2637	B1
2638	B1
2639	B1
2642	C1
2649	A1
2650	B2
2651	D2
2652	D2
2656	C5
2657	C5
2662	C1
2663	C1
2665	C1
2667	C5
2668	C1
2669	B1
2670	C3
2671	B3
2672	B3
2673	B3
2674	B3
2677	B4
2679	C3
2681	C5
2682	D5
2865	D1
2866	D1
2867	D1
2868	C3
2869	B3
2870	B3
2871	B3
2872	B3
2873	B3
2874	B3
2879	B4
2880	C4
2882	D3
2883	D3
2884	D3
2886	C2
2888	C1
3511	B4
3512	C4
3513	C4
3514	C4
3515	C4
3516	C4
3517	B5
3518	B5
3519	A5
3521	B4
3522	C4
3523	B3
3524	C4
3525	B1
3526	B1
3527	A1
3528	A1
3529	A1
3530	A1
3531	A4
3532	B4
3533	A4
3534	B4
3535	A5
3536	A4
3537	A5
3538	B4
3541	A4
3542	A5
3543	A5
3544	B5
3545	C5
3546	C5
3547	C5
3548	C5
3550	C2
3551	A5
3552	A5
3553	A5
3555	B5
3556	A5
3557	A5
3561	A5
3562	B5
3563	B4
3564	C4
3565	B3
3566	B3
3569	A4
3570	A4
3571	A2
3572	B2
3573	B2
3574	B2
3575	C1
3576	B1
3577	B3
3578	C3
3580	C2
3581	A2
3582	B3
3583	B2
3584	B2
3585	B2
3586	B2
3587	A2
3588	A2
3589	A2
3590	B2
3591	B2
3592	B2
3593	B3
3594	A3
3595	A3
3596	A3
3597	B3
3598	B3
3600	B3
3601	C2
3602	C2
3603	C1
3604	C1
3605	C2
3606	C2
3607	C1
3608	C1
3609	C1
3610	C1
3611	C2
3612	C2
3613	C2
3614	C2
3615	C2
3616	C2
3617	C2
3618	C2
3619	C2
3620	C2
3621	C1
3622	C1
3623	C1
3624	C1
3625	C1
3626	C1
3627	C1
3628	C1
3631	A1
3632	B1
3633	A1
3634	B1
3635	B1
3636	B1
3637	B1
3638	B1
3639	B1
3640	B1
3642	B1
3643	B1
3644	C1
3645	B1
3646	B1
3647	A1
3648	B1
3649	D2
3650	D1
3651	D2
3652	D2
3653	B3
3659	C2
3660	C3
3662	A2
3663	B2
3665	D5
3666	C5
3669	A3
3671	C1
3672	C1
3673	C1
3674	D1
3675	C1
3676	D1
3677	C1
3678	C2
3679	D2
3680	D3
3682	D1
3683	C1
3684	C1
3685	C3
3686	B4
3687	C4
3688	B5
3689	B5
3690	C4
3691	B4
3692	D3
3693	C4
3694	D4
3696	D3
3697	D3
3698	D3
3699	D3
3701	B4
3702	C4
3848	D3
3850	C3
3851	C3
3852	D2
3853	D2
4506	D2
4510	B5
4511	B4
4512	C4
4513	D3
4514	A5
4515	A5
4516	A4
4517	A4
4518	A5
4519	B5
4520	B5
4521	B5
4522	B5
4523	B5
4524	A4
4525	A5
4526	A5
4534	B4
4535	B5
4536	B5
4537	B5
4538	B5
4539	B5
4540	C5
4541	C5
4542	C5
4543	C5
4544	C5
4545	C5
4546	C4
4547	C4
4548	C5
4549	D5
4550	D5
4551	D5
4552	D5
4553	D5
4554	D3
4555	C4
4556	C4
4557	B4
4558	B4
4559	B4
4560	B4
4561	B4
4562	B3
4563	A3
4564	A3
4565	A3
4566	A3
4567	A3
4568	A2
4569	D2
4570	A2
4571	A2
4572	A2
4573	A2
4574	B2
4575	B2
4576	B2
4577	B2
4578	B3
4579	C3
4580	C3
4581	C2
4582	D3
4583	D1
4584	C1
4585	C1
4586	C1
4587	C1
4588	B1
4589	B1
4590	B1
4591	A1
4592	A1
4593	A1
4594	A1
4595	A1
4596	B4
4597	B4
4598	B4
4599	B4
4600	A3
4601	B3
4602	B3
4603	D3
4604	B1
4605	A1
4606	B1
4618	C5
4619	C5
4620	D3
4621	C2
4622	D2
4623	D2
5512	A5
7511	B3
7512	A4
7513	B2
7515	B1
7521	A1
7522	A1
7523	A2
7524	B2
7526	A5
7527	A5
7528	B3
7529	C2
7531	C1
7532	C1
7533	C1
7534	C1
7535	A1
7536	B2
7539	C2
7541	D1
7543	C1
7544	D2
7545	D2
7551	D3
7553	D3

DPL BOARD (pt.2)

DPL BOARD - COMPONENT LAYOUT

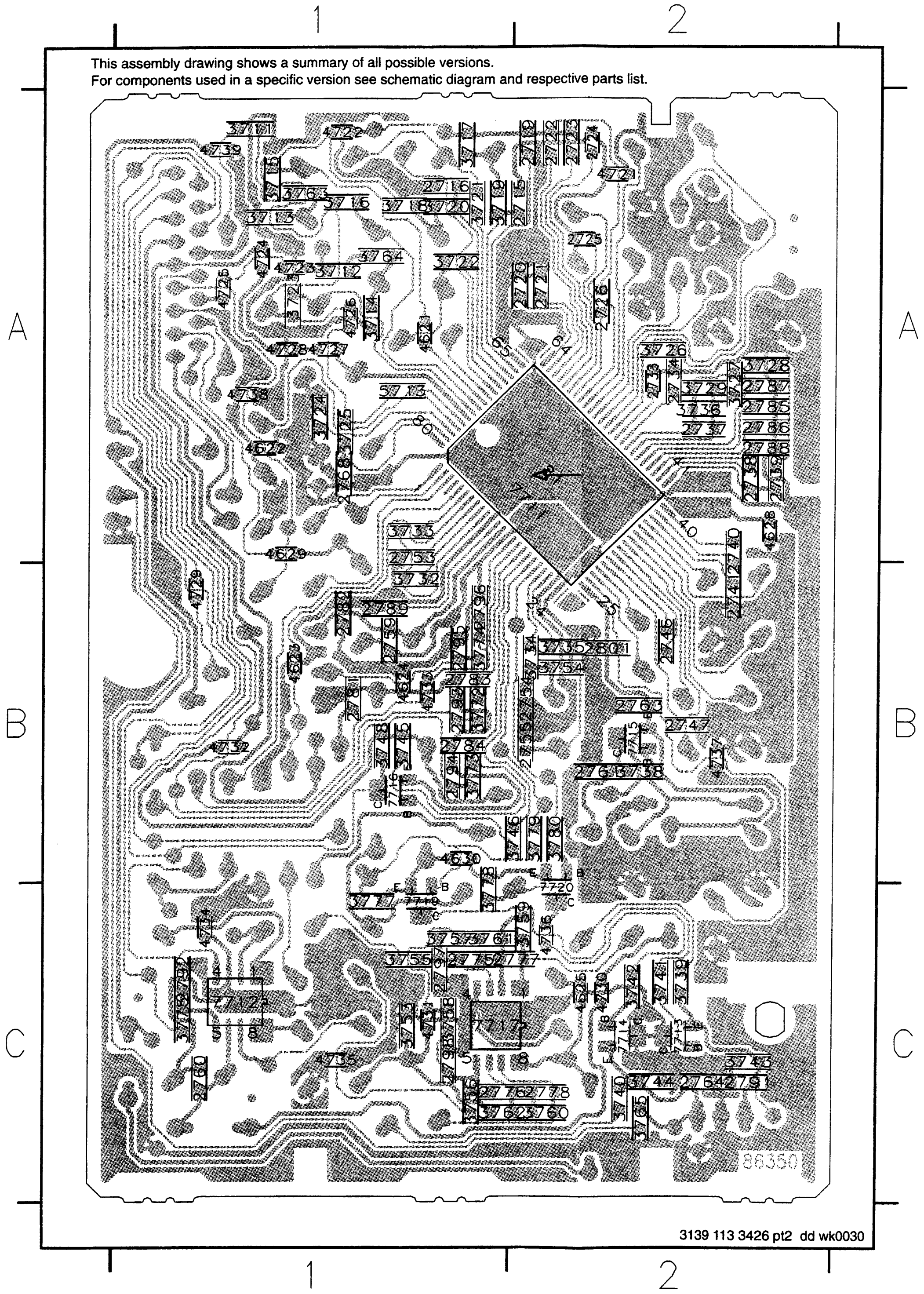

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.

3139 113 3426 pt2 dd wk0030

1
2
A
B
C
FW-C8X/boards/3139_113_34262_01
8239 210 86350
2732
2728
2727
2713
2711
2718
2717
2730
2729
2731
2735
2714
2712
2770
2765
2766
2767
2769
2751
2752
9733
9723
9739
2742
2743
2748
2744
2746
2790
2724
9725
5712
6711
6712
2749
2762
2800
2750
2779
2799
2757
2758
2773
2771
2774
2772
2780
2756
1711
3752
3751
9712
3737
9735
1712

1711	C1
1712	A2
2711	A2
2712	A2
2713	A2
2714	A2
2717	A2
2718	A2
2727	A1
2728	A1
2729	A1
2730	A1
2731	A1
2732	A1
2735	A1
2742	B1
2743	B1
2744	B1
2745	B1
2748	B1
2749	B1
2750	C1
2751	B2
2752	B2
2756	C2
2757	C2
2758	C2
2762	B1
2765	A2
2766	A2
2767	A2
2769	A2
2770	A2
2771	C1
2772	C2
2773	C2
2774	C2
2779	C1
2780	C2
2790	B2
2799	C2
2800	B2
3737	C2
3751	C1
3752	C2
5711	B1
5712	B2
6711	B1
6712	B2
9712	C2
9721	A2
9722	A1
9723	A2
9724	B2
9725	B2
9726	B2
9727	B2
9728	B2
9729	B2
9730	B2
9731	B1
9732	C1
9733	A2
9734	B2
9735	C2
9736	B2
9737	B2
9738	B2
9739	A2

DPL BOARD - CHIP LAYOUT


This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.

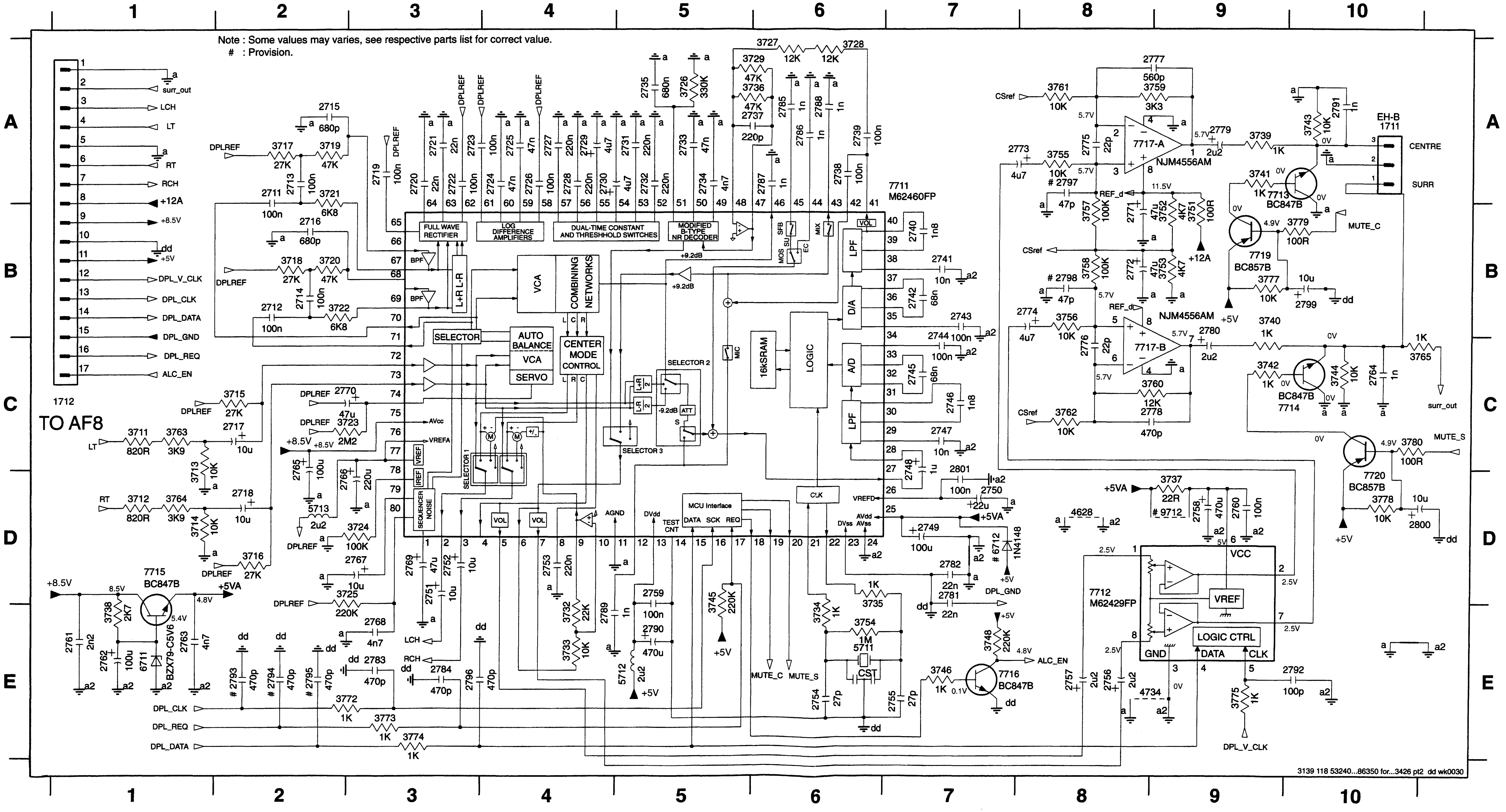
3139 113 3426 pt2 dd wk0030

1
2
A
B
C
3711
4722
4739
3717
2719
2722
2723
2724
4721
3715
3763
3716
3718
3720
2716
3719
2715
3713
4724
4723
3712
3764
3722
2720
2721
2725
2726
4725
3721
4726
3714
4621
4728
4727
3726
3729
3728
2787
2785
2786
2788
3736
2737
4738
5713
3724
4622
3735
2768
7711
3733
2753
3732
4629
4628
2740
2741
4729
2782
2789
2739
2781
2795
2796
3734
3735
2801
3754
2746
4623
2783
2784
2793
2794
4732
2748
2745
2763
2747
2761
3758
4737
4630
3777
7719
7720
3775
3761
3755
2777
2778
7712
7717
3759
4736
4733
4735
3740
3744
2764
2791
3743
2776
2762
2760
3762
3760
3765
86350

2715	A2
2716	A1
2719	A2
2720	A2
2721	A2
2722	A2
2723	A2
2724	A2
2725	A2
2726	A2
2733	A2
2734	A2
2737	A2
2738	A2
2739	A2
2740	A2
2741	B2
2746	B2
2747	B2
2753	A1
2754	B2
2755	B2
2759	B1
2760	C1
2761	B2
2763	B2
2764	C2
2768	A1
2775	C1
2776	C1
2777	C2
2778	C2
2781	B1
2782	B1
2783	B1
2784	B1
2785	A2
2786	A2
2787	A2
2788	A2
2789	B1
2791	C2
2792	C1
2793	B1
2794	B1
2795	B1
2796	B1
2797	C1
2798	C1
2801	B2
3711	A1
3712	A1
3713	A1
3714	A1
3715	A1
3716	A1
3717	A1
3718	A1
3719	A1
3720	A1
3721	A1
3722	A1
3723	A1
3724	A1
3725	A1
3726	A2
3727	A2
3728	A2
3729	A2
3732	B1
3733	A1
3734	B2
3735	B2
3736	A2
3738	B2
3739	C2
3740	C2
3741	C2
3742	C2
3743	C2
3744	C2
3745	B1
3746	B2
3748	B1
3753	C1
3754	B2
3755	C1
3756	C1
3757	C1
3758	C1
3759	C2
3760	C2
3761	C1
3762	C1
3763	A1
3764	A1
3765	C2
3772	B1
3773	B1
3774	B1
3775	C1
3777	C1
3778	C1
3779	B2
3780	B2
4621	A1
4622	A1
4623	B1
4624	B1
4625	C2
4628	A2
4629	A1
4630	B1
4721	A2
4722	A1
4723	A1
4724	A1
4725	A1
4726	A1
4727	A1
4728	A1
4729	B1
4730	C2
4731	C1
4732	B1
4733	B1
4734	C1
4735	C1
4736	C2
4737	B2
4738	A1
4739	A1
5713	A1
7711	A2
7712	C1
7713	C2
7714	C2
7715	B2
7716	B1
7717	C1
7719	C1
7720	C2

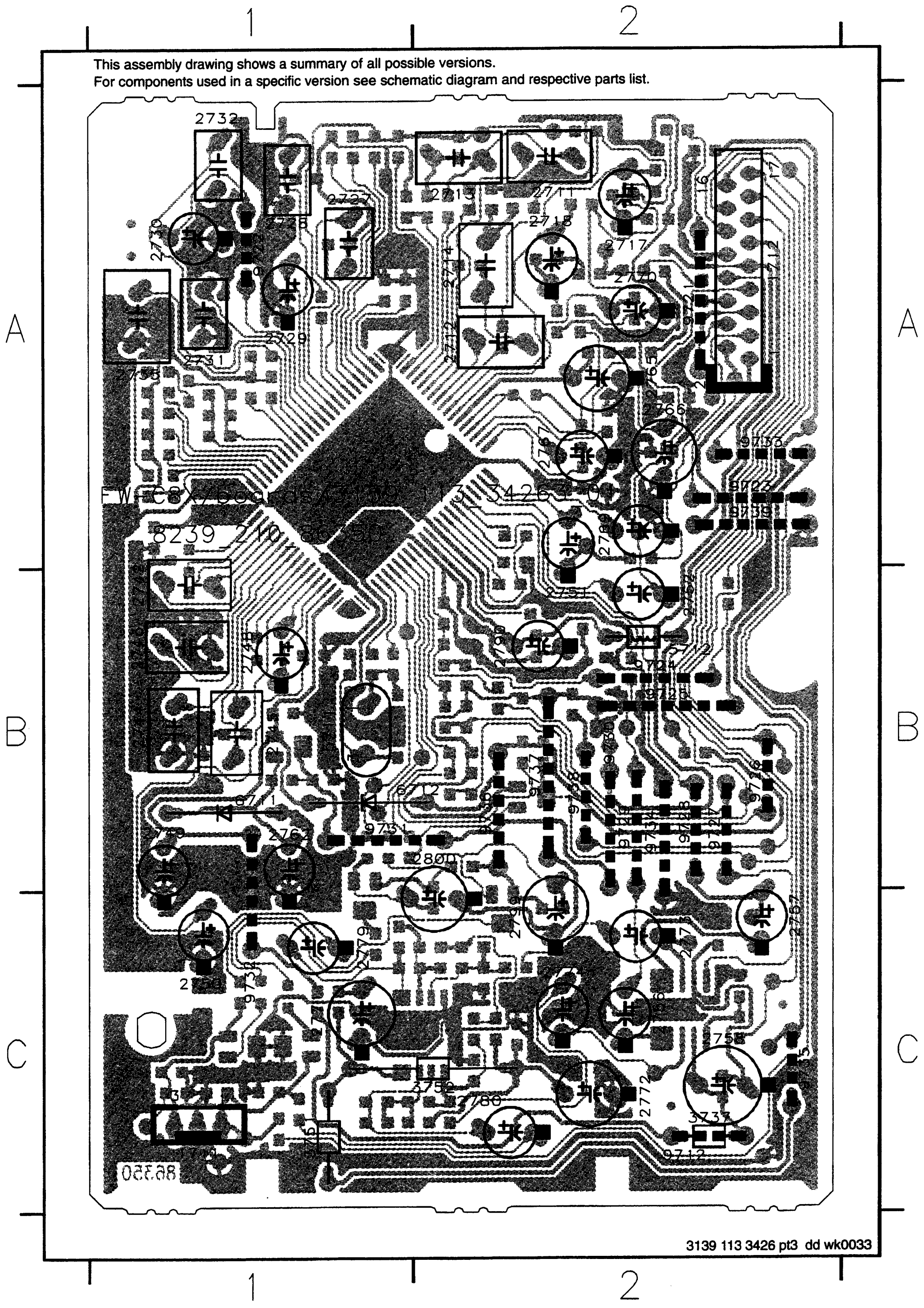
DPL CIRCUIT DIAGRAM

1711	A10
1712	C1
2711	A2
2712	B2
2713	A2
2714	B2
2715	A2
2716	B2
2717	C2
2718	D2
2719	A3
2720	A3
2721	A3
2722	A3
2723	A3
2724	A4
2725	A4
2726	A4
2727	A4
2728	A4
2729	A4
2730	A4
2731	A5
2732	A5
2733	A5
2734	A5
2735	A5
2737	A5
2738	A6
2739	A6
2740	B7
2741	B7
2742	B7
2743	B7
2744	C7
2745	C7
2746	C7
2747	C7
2748	C7
2749	D7
2750	D7
2751	D3
2752	D3
2753	D4
2754	E6
2755	E7
2756	E8
2757	E8
2758	D9
2759	D5
2760	D9
2761	E1
2762	E1
2763	E1
2764	C10
2765	C2
2766	D2
2767	D3
2768	E3
2769	D3
2770	C2
2771	B8
2772	B8
2773	A7
2774	B8
2775	A8
2776	C8
2777	A8
2778	C8
2779	A9
2780	B9
2781	D7
2782	D7
2783	E3
2784	E3
2785	A6
2786	A6
2787	A6
2788	A6
2789	E4
2790	E5
2791	A10
2792	E10
2793	E2
2794	E2
2795	E2
2796	E3
2797	A8
2798	B8
2799	B10
2800	D10
2801	D7
3711	C1
3712	D1
3713	D1
3714	D1
3715	C2
3716	D2
3717	A2
3718	B2
3719	A2
3720	B2
3721	A2
3722	B2
3723	C3
3724	D3
3725	D3
3726	A5
3727	A6
3728	A6
3729	A6
3732	E4
3733	E4
3734	E6
3735	D6
3736	A6
3737	D9
3738	E1
3739	A9
3740	B9
3741	A9
3742	C9
3743	A10
3744	C10
3745	D5
3746	E7
3748	E7
3751	B9
3752	B9
3753	B9
3754	E6
3755	A8
3756	B8
3757	B8
3758	B8
3759	A9
3760	C9
3761	A8
3762	C8
3763	C1
3764	D1
3765	C10
3772	E3
3773	E3
3774	E3
3775	E9
3777	B9
3778	D10
3779	B10
3780	C10
4628	D8
4734	E9
5711	E6
5712	E5
5713	D2
6711	E1
6712	D7
7711	A7
7712	D8
7713	A9
7714	C9
7715	D1
7716	E7
7717-A	A8
7717-B	C8
7719	B9
7720	D10
9712	D9


Note : Some values may varies, see respective parts list for correct value.
# : Provision.
1712
TO AF8
surr_out
LCH
LT
RT
RCH
+12A
+8.5V
dd
+5V
DPL_V_CLK
DPL_CLK
DPL_DATA
DPL_GND
DPL_REQ
ALC_EN
DPLREF
7711
M62460FP
FULL WAVE RECTIFIER
LOG DIFFERENCE AMPLIFIERS
DUAL-TIME CONSTANT AND THRESHHOLD SWITCHES
MODIFIED B-TYPE NR DECODER
VCA
COMBINING NETWORKS
SELECTOR
AUTO BALANCE
CENTER MODE CONTROL
SERVO
SELECTOR 1
SELECTOR 2
SELECTOR 3
SEQUENCER NOISE
16KSRAM
LOGIC
LPF
D/A
A/D
CLK
MCU Interface
DATA SCK REQ
TEST CNT
AGND
DVdd
AVdd
DVss AVss
VREFD
7715
BC847B
BZX79-C5V6
+5VA
7717-A
7717-B
NJM4556AM
7713
BC847B
7719
BC857B
7714
BC847B
7720
BC857B
7716
BC847B
EH-B
1711
CENTRE
SURR
MUTE_C
MUTE_S
CSref
7712
M62429FP
VCC
VREF
LOGIC CTRL
GND
DATA
CLK
1N4148
CST
1 2 3 4 5 6 7 8 9 10
A B C D E
3139 118 53240...86350 for...3426 pt2 dd wk0030

DPL BOARD (pt.3)

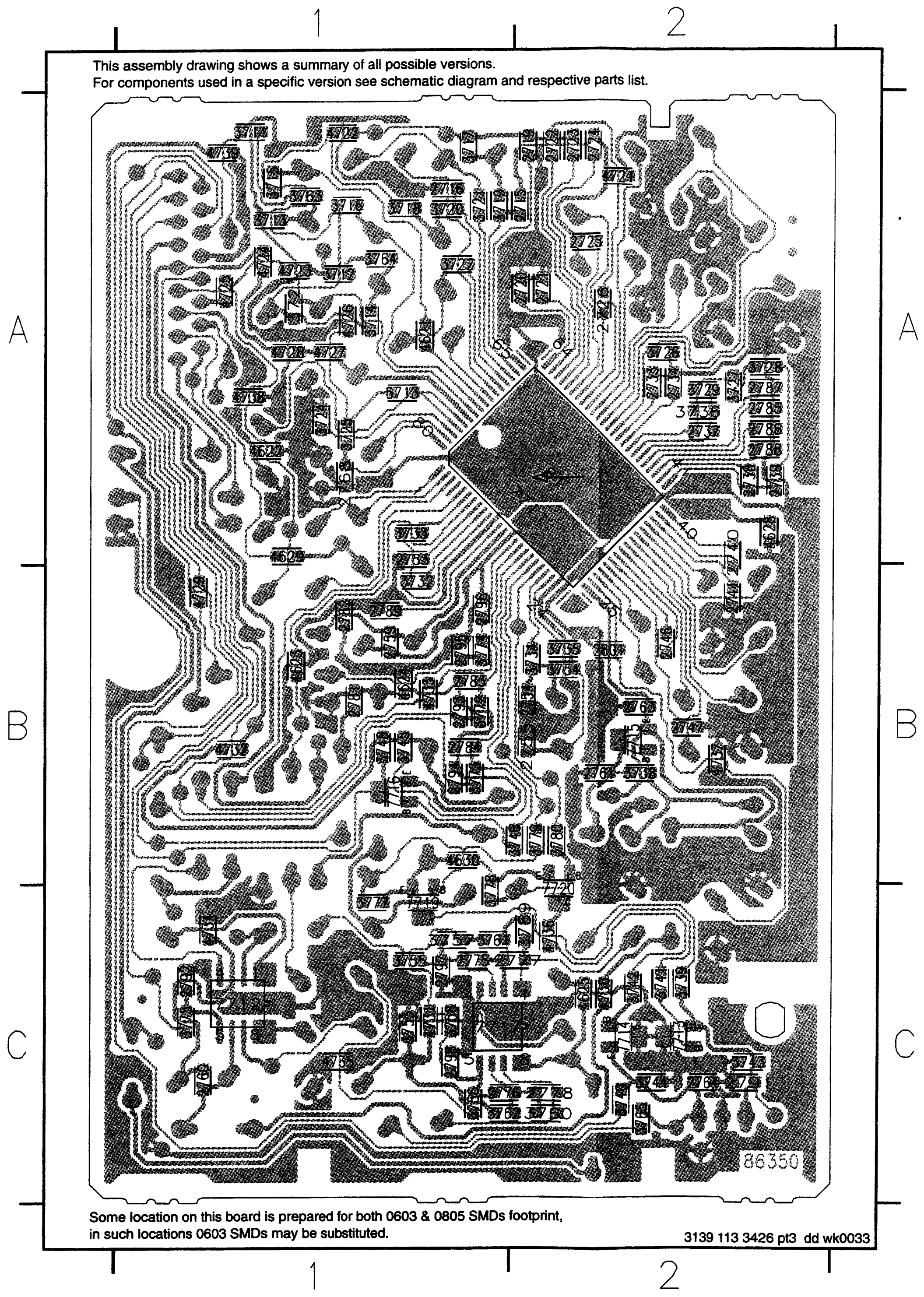
DPL BOARD - COMPONENT LAYOUT


This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.

3139 113 3426 pt3 dd wk0033

1711	C1
1712	A2
2711	A2
2712	A2
2713	A2
2714	A2
2717	A2
2718	A2
2727	A1
2728	A1
2729	A1
2730	A1
2731	A1
2732	A1
2735	A1
2742	B1
2743	B1
2744	B1
2745	B1
2748	B1
2749	B1
2750	C1
2751	B2
2752	B2
2756	C2
2757	C2
2758	C2
2762	B1
2765	A2
2766	A2
2767	A2
2769	A2
2770	A2
2771	C1
2772	C2
2773	C2
2774	C2
2779	C1
2780	C2
2790	B2
2799	C2
2800	B2
3737	C2
3751	C1
3752	C2
5711	B1
5712	B2
6711	B1
6712	B2
9712	C2
9721	A2
9722	A1
9723	A2
9724	B2
9725	B2
9726	B2
9727	B2
9728	B2
9729	B2
9730	B2
9731	B1
9732	C1
9733	A2
9734	B2
9735	C2
9736	B2
9737	B2
9738	B2
9739	A2

DPL BOARD - CHIP LAYOUT


This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.

Some location on this board is prepared for both 0603 & 0805 SMDs footprint,
in such locations 0603 SMDs may be substituted.

3139 113 3426 pt3 dd wk0033

2715	A2
2716	A1
2719	A2
2720	A2
2721	A2
2722	A2
2723	A2
2724	A2
2725	A2
2726	A2
2733	A2
2734	A2
2737	A2
2738	A2
2739	A2
2740	A2
2741	B2
2746	B2
2747	B2
2753	A1
2754	B2
2755	B2
2759	B1
2760	C1
2761	B2
2763	B2
2764	C2
2768	A1
2775	C1
2776	C1
2777	C2
2778	C2
2781	B1
2782	B1
2783	B1
2784	B1
2785	A2
2786	A2
2787	A2
2788	A2
2789	B1
2791	C2
2792	C1
2793	B1
2794	B1
2795	B1
2796	B1
2797	C1
2798	C1
2801	B2
3711	A1
3712	A1
3713	A1
3714	A1
3715	A1
3716	A1
3717	A1
3718	A1
3719	A1
3720	A1
3721	A1
3722	A1
3723	A1
3724	A1
3725	A1
3726	A2
3727	A2
3728	A2
3729	A2
3732	B1
3733	A1
3734	B2
3735	B2
3736	A2
3738	B2
3739	C2
3740	C2
3741	C2
3742	C2
3743	C2
3744	C2
3745	B1
3746	B2
3748	B1
3753	C1
3754	B2
3755	C1
3756	C1
3757	C1
3758	C1
3759	C2
3760	C2
3761	C1
3762	C1
3763	A1
3764	A1
3765	C2
3772	B1
3773	B1
3774	B1
3775	C1
3777	C1
3778	C1
3779	B2
3780	B2
4621	A1
4622	A1
4623	B1
4624	B1
4625	C2
4628	A2
4629	A1
4630	B1
4721	A2
4722	A1
4723	A1
4724	A1
4725	A1
4726	A1
4727	A1
4728	A1
4729	B1
4730	C2
4731	C1
4732	B1
4733	B1
4734	C1
4735	C1
4736	C2
4737	B2
4738	A1
4739	A1
5713	A1
7711	A2
7712	C1
7713	C2
7714	C2
7715	B2
7716	B1
7717	C1
7719	C1
7720	C2

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PHILIPS

Art. Code: 53
Sachgebiet: AUDIO MIDI ANLAGEN
Memo: DE10JUN

SI

Wichtig für die Werkstatt!
Nummer: 53260
Datum: 19.12.00

Service Information

Betrifft: Gerätetypen s.u.

Verteiler: S d F 1

FW-C55, FW-C80, FW-C83, FW-C85, FW-M55, FW-P75, FW-P88

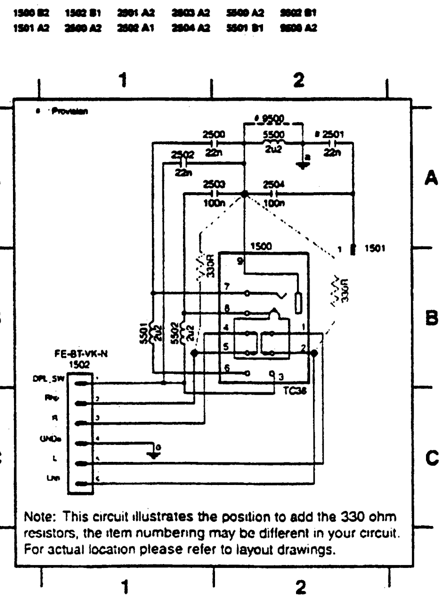
TON SETZT ZW. AUS BEI DRAHTLOSEN KOPFHÖRERN

IRIS (SYMPTOM) CODE 1 5 5 4

Wenn ein Drahtloser Kopfhörer (z.B. SBC8320, SBCH630 etc.) angeschlossen ist kann es sein das der Ton zeitweilig unterbrochen wird.

Die Urasche liegt in einer falschen Anpassung der Impedance des Kopfhörerverstärkers (32 Ω- 1kΩ) und dem Drahtlosen Sender (10kΩ). Dies hat zur folge das die Ausgangseitige Muteschaltung (Transistor) durch die reine NF selbstständig durchschaltet.
Abhilfe schaffen hier zwei Wiederstände a´ 330Ω die hinzugefügt werden müssen.

Headphone Circuit


1500 B2
1502 B1
2501 A2
2503 A2
5500 A2
5502 B1
1501 A2
2500 A2
2502 A1
2504 A2
5501 B1
9500 A2
1
2
A
B
C
# Provision
# 9500
2500
22n
5500
2u2
# 2501
22n
2502
22n
2503
100n
2504
100n
330R
330R
1500
1501
5501
2u2
5502
2u2
FE-BT-VK-N
1502
DPL_SW
Rhp
R
GNDa
L
Lhp
TC38

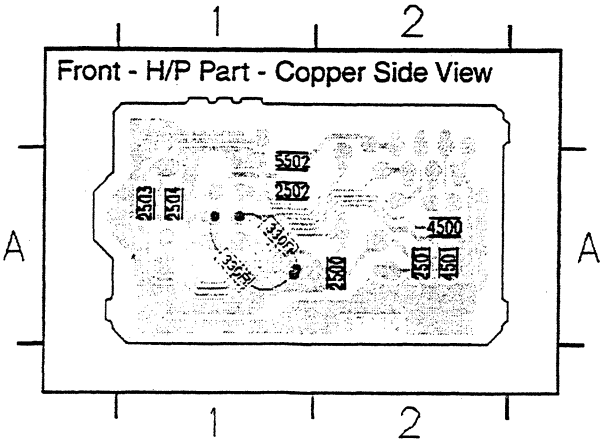
Note: This circuit illustrates the position to add the 330 ohm resistors, the item numbering may be different in your circuit. For actual location please refer to layout drawings.

bitte wenden !

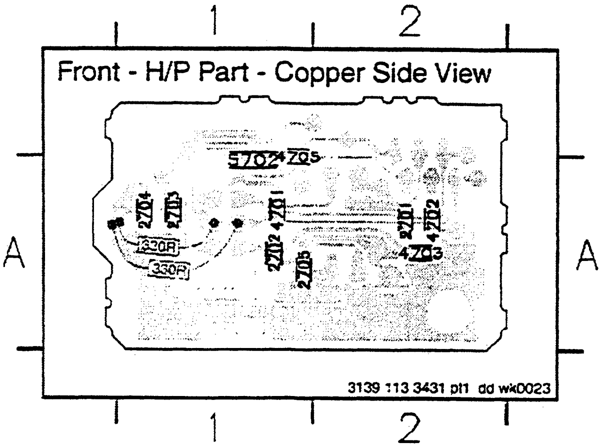
Form 80 048

Nachdruck nicht gestattet! Änderungen vorbehalten.

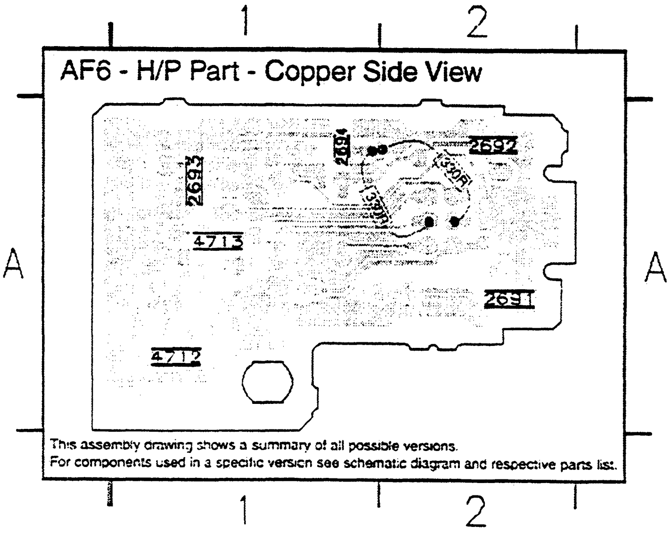
Headphone SMD layout (copper side view)


1
2
A
Front - H/P Part - Copper Side View
5502
2502
2503
2504
330R
330R
2500
4500
2501
4501

For FW-C8..., FW-P8..., FW-C9... & FW-P9


1
2
A
Front - H/P Part - Copper Side View
5702
4705
2704
2703
4701
2702
330R
330R
2705
2701
4702
4703
3139 113 3431 pt1 dd wk0023

For FW-D1 & FW-D5


1
2
A
AF6 - H/P Part - Copper Side View
2694
2692
330R
330R
2693
4713
2691
4712

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.

For FW-C5..., FW-V5..., FW-M5...,
FW-C7... & FW-P7...